

The Other Bomber Battle

An Examination of the Problems that arose between the Air Staff and the AOC Bomber Command between 1942 and 1945 and their Effects on the Strategic Bomber Offensive

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Abbreviations

ACAS(i)	Assistant Chief of Air Staff (Intelligence)
ACAS(O)	Assistant Chief of Air Staff (Operations)
ACAS(P)	Assistant Chief of Air Staff (Personnel)
ADGB	Air Defence of Great Britain
AFC	Air Force Cross
AEAF	Allied Expeditionary Air Force
AHB	Air Historical Branch
AM	Air Ministry
AOC	Air Officer Commanding
AOC-in-C	Air Officer Commanding-in-Chief
AWPD	Air War Plans Division (American)
BBSU	British Bombing Survey Unit
CAS	Chief of the Air Staff
CB	Companion of the Most Honourable Order of the Bath
CBE	Commander of the Most Excellent Order of the British Empire
CBO	Combined Bomber Offensive
CCOS	Combined Chiefs of Staff
CID	Committee of Imperial Defence
CIE	Companion of the Most Eminent Order of the Indian Empire
C-in-C	Commander-in-Chief
Cmd	Command
CMG	Companion of the Most Distinguished Order of St Michael and St George
COS	Chiefs of Staff
COSSAC	Chief of Staff to the Supreme Allied Commander
CSTC	Combined Strategic Target Committee
DBO	Director (or Directorate) of Bomber Operations
DCAS	Deputy Chief of the Air Staff
DDBOps	Deputy Director of Bomber Operations
DFC	Distinguished Flying Cross
D of I (O)	Director of Intelligence, Operations
D of Plans	Director of Plans
DR	Dead Reckoning
DRC	Defence Requirements Committee
DSO	Distinguished Service Order
EOU	Enemy Objectives Unit
ETA	Estimated Time of Arrival
GAF	German Air Force
GBE	Knight of the Most Excellent Order of the British Empire
GCB\	Knight Grand Cross of the Most Excellent Order of the Bath
GOC	General-Officer-Commanding
HCU	Heavy Conversion Unit

HDAF	Home Defence Air Force
HE	High Explosive (Bomb)
IE	Initial Equipment
KBE	Knight Commander of the Most Excellent Order of the British Empire
KCB	Knight Commander of the Most Honourable Order of the Bath
KG	The Most Honourable Order of the Garter
Kgr	<i>Kampfgruppe</i>
MAAF	Mediterranean Allied Air Forces
MAN	<i>Maschinenfabrik Augsburg-Nürnberg Aktiengesellschaft</i>
MC	Military Cross
MEW	Ministry of Economic Warfare
MT	Motor Transport
MVO	Member of the Royal Victorian Order
OBE	Order of the British Empire
OM	Order of Merit
OKW	<i>Oberkommando der Wehrmacht</i>
ORB	Operational Record Book
ORS	Operational Research Section
OUT	Operational Training Unit
PFF	Path Finder Force
PRO	Public Record Office
RAF	Royal Air Force
RE 8	Research and Experiments Dept. 8 (Ministry of Home Security)
RFC	Royal Flying Corps
RRS	Railway Research Service
SASO	Senior Air Staff Officer
SHAEF	Supreme Headquarters Allied Expeditionary Force
SOE	Special Operations Executive
TFF	Target Finding Force
TR 1335	Gee
UE	Unit Establishment
USAAF	United States Army Air Force
USSAF	United States Strategic Air Forces
USSAFE	United States Strategic Air Forces Europe
USSTAF	United States Strategic Air Forces Europe
VCAS	Vice-Chief of the Sir Staff
VHF	Very High Frequency
WA	Western Air (Plans)

Glossary

<i>Album Leaf</i>	Improved version of <i>Oboe</i> .
<i>Braddock</i>	Distribution of sabotage materials throughout Germany.
<i>Casablanca</i>	Directive issued to British and American Air Force Commanders on 21 January 1943.
<i>Crossbow</i>	The attack on V-weapon launching sites.
<i>Clarion</i>	An American plan for strategic bombers and fighters to swarm over Germany attacking many targets in a display of air superiority.
<i>Düppel</i>	German name for <i>Window</i> .
<i>Enigma</i>	German encoding machine.
<i>Freya</i>	German early warning radar.
<i>Gardening</i>	Aerial minelaying.
<i>Gee</i>	Radar aid to navigation providing rapid fixing.
<i>G-H</i>	Radar aid to navigation and blind bombing.
<i>Highball</i>	1,280lb Spherical Spinning Mine designed for use against shipping but never employed.
<i>H2S</i>	Radar aid to navigation and target identification.
<i>H2X</i>	American version of <i>H2S</i> .
<i>Hurricane</i>	Plans for concentrated air attack on the Ruhr and Axis Europe.
<i>Knickebein</i>	German navigational aid.
<i>Market Garden</i>	Second Army and airborne operations to seize bridges at Nijmegen and Arnhem, September 1944
<i>Meacon</i>	Device to mask radio beacon radiations.
<i>Neptune</i>	The first phase of <i>Overlord</i> : crossing the Channel and landing.
<i>Oboe</i>	Blind bombing and target marking device.
<i>Octagon</i>	Conference in Quebec September 1944.
<i>Overlord</i>	The Allied invasion of France in June 1944.

<i>Pointblank</i>	Directive issued in June 1943 for the Combined Bomber Offensive.
<i>Rankin</i>	Plan for the occupation of Europe in the event of a sudden German collapse.
<i>Shaker</i>	Method of illuminating and marking a target using Gee to determine position
<i>Sigint</i>	Intelligence derived from intercepted and decoded messages transmitted by <i>Enigma</i> machines.
<i>Sledgehammer</i>	Plan for a limited invasion of Europe in 1942 either to exploit a German setback or to ease German pressure on the Eastern Front.
<i>Thunderbolt</i>	Study of the strategy and conduct of the Combined Bomber Offensive held at Old Sarum, August 1947.
<i>Thunderclap</i>	Plan for an overwhelming air attack on Berlin aimed at bringing the war to an end.
<i>Ultra</i>	Decrypts of messages encoded on the <i>Enigma</i> machine.
<i>Upkeep</i>	9,150lb Mines (colloquially called 'bouncing bombs') released in attack on German dams, 16 May 1943.
<i>Window</i>	Tinfoil strips to create myriad responses on radar screens.
<i>X-Gerät</i>	German bombing aid

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Abstract

In addition to the lonely battles fought by Bomber Command crews in the night skies over Germany from February 1942 to May 1945 there was an equally intense if much less bloody struggle in the halls of power between the Air Staff and the AOC Bomber Command, concerning the best employment of the strategic bomber forces. The argument of this study is that the Royal Air Force's contribution to the strategic air offensive was badly mismanaged: that Air Chief Marshal Sir Arthur Harris, Air Officer Commanding-in-Chief Bomber Command, from 22 February 1942 to the end of the war, by ignoring, or often over-riding the Air Staff, affected not only the course but also the duration of the Second World War. Most histories of the bomber war provide the result of the disagreements between the Chief of the Air Staff, Marshal of the Royal Air Force Sir Charles Portal and Harris, but rarely are the problems discussed in detail. This thesis examines the arguments that were raised by the various authorities, together with the refutations presented not only by the major participants, but also by the advisers to those authorities. The significant feature of the disagreements was that while Harris acted unilaterally, the Air Staff reached consensus decisions. Unfortunately, the decisions reached by the Air Staff on major issues were all too frequently either ignored or subverted by the AOC Bomber Command. One significant feature of the refutations presented to Harris was their dependence on the operational experience gained earlier in the bomber war by junior members of the Air Staff. For too long the direction of the war had been left in the hands of senior officers whose previous service had become irrelevant to war requirements in the 1940s. By 1942, comparatively junior officers were thus tendering advice to senior officers who, in the case of AOC Bomber Command, resented the authority which, Harris argued, had apparently been accorded these juniors. Harris was unable to accept that they were advisers and were never in a position to issue orders: orders could only come from Portal. Finally, this thesis provides an analysis of the strengths and weaknesses of the major participants and argues that, had the war been conducted as the Air Staff required, victory would have been achieved earlier than May 1945.

Introduction

The subject of this thesis is Bomber Command, Royal Air Force, during the Second World War. But it is not a detailed description of actual operations or campaigns, nor will it provide lengthy descriptions of the scientific aids developed for bomber crews which made their Command an efficient and powerful force. The courage of the bomber crews, whose chances of surviving an operational tour of thirty sorties were grotesquely small, will also remain largely undiscussed. Rather, the focus of this thesis is the story of the bomber battle fought in the Air Ministry corridors of power from February 1942 to May 1945. It is a story of conflict: conflict which should never have been tolerated. Within any ordered society, but especially in a military organisation, there must exist a recognised chain of command. There must be those who make the decisions and those who carry them out. Initially, the right to discuss is acceptable but once a firm order is given subordinate commanders have but two options: obey or resign. Within the Royal Air Force the Air Staff made the decisions and, in the case of Bomber Command, it was the Air Officer Commanding Bomber Command who was responsible for their implementation. This thesis is a catalogue of discussion, disagreement and disobedience at the highest level. All too frequently it meant that the strategic bomber offensive was not waged according to the wishes of the Air Staff. Bomber Command fought its war largely on the lines determined by its Commander-in-Chief, who viewed his force as a potential war-winner rather than one component of the total armed forces required to overcome the enemy.

When the Air Force Constitution Act passed the Report stage in the British House of Commons on 13 November 1917 it prepared the way for the establishment of two significant bodies: the Air Ministry and the Royal Air Force. To enable the new Air Ministry, the political controller of the military service, the Royal Air Force, to carry out its primary function, an Air Council was formed on 3 January 1918. The Air Council's responsibilities were principally the determination of the regulations and operational procedures necessary for the efficient performance of both the Air Ministry and the Royal Air Force. Although the Secretary of State for Air (who was also the President of the Air Council) held the whip-hand, the detailed planning required became the responsibility of the Air

Staff. Their task was to provide a permanent staff charged with preparing for the next war including the provision of personnel, equipment, and both strategic and tactical planning.

To enable the Air Staff to carry out its responsibilities it was divided into a series of Departments and those further divided into Directorates and even Deputy Directorates. The system, developed in 1918, remained in existence during the Second World War despite enormous expansion. Perhaps remarkably, in the face of such significant growth and development, the individuals central to this thesis also remained largely *in situ* throughout the war, promotions notwithstanding.

For most of the Second World War Marshal of the Royal Air Force Sir Charles Portal, as Chief of the Air Staff (CAS), was in overall command. Under him were the Air Officers responsible for such areas as Operations, Policy, Intelligence and Operational Requirements and Tactics. Operational control was delegated to Command level, and in this study the focus will be on Bomber Command. Further delegation in Bomber Command was accorded Groups, Wings, Stations and Squadrons.

Who were the principal players in the unfortunate and unnecessary drama with which this thesis is concerned? Within the Air Ministry, after Portal, there were four significant figures: the Assistant Chief of the Air Staff (Operations), later Deputy Chief of the Air Staff, Air Vice-Marshal Sir Norman Bottomley, and in the Directorate of Bomber Operations, Air Commodore John Baker, Group Captain Sydney Bufton, and Squadron Leader Arthur Morley. Within Bomber Command one figure dominated: Air Chief Marshal Sir Arthur Harris, with, in a distinctly secondary role, his Senior Air Staff Officer, later Deputy Air Officer Commanding-in-Chief (AOC-in-C), Air Vice-Marshal Sir Robert Saundby.

Portal's appointment to CAS in October 1940 had been an unexpected promotion for a comparatively young and administratively inexperienced officer. He readily admitted that he was awed by the responsibilities entailed, and feared that his inexperience and lack of knowledge concerning the people with whom he would have to work would be significant handicaps. He did not make friends easily and the remoteness of his appointment added to his concerns. Yet, despite his initial doubts, Portal was not a solitary figure. He acknowledged his deficiencies concerning bomber operations and, although he did not suffer fools gladly, he was always prepared to listen to suggestions no matter how unorthodox or unfamiliar.

He was equally at home whether in discussion with a Squadron Leader or the Prime Minister. Portal had enormous responsibilities, including attendance at Chiefs of Staff, Cabinet, or Defence Committee meetings, discussions with senior officers from the various Commands and formidably, having to answer directly to Winston Churchill. Portal, as CAS, had ultimate responsibility for decisions made by the Air Staff.

Apart from a two year period from March 1927 to January 1929 when he commanded No 7(Bomber) Squadron, however, Portal had ended his active flying career in 1922. Thus, by September 1939, it could not be claimed that he was fully cognizant of the requirements for the bomber war about to begin. Fortunately, his brief sojourn as Air Officer Commanding-in-Chief, Bomber Command from April to October 1940 had at least alerted him to some of the problems that his bomber crews would have to overcome. He early appreciated that the accuracy he himself had achieved in the Laurence Minot Memorial Trophy aerial bombing competitions in both 1927 and 1928 was not attainable in war conditions in 1940 by inadequately trained and ill-equipped bomber crews. Although aware of the need to destroy precise targets in Germany (and oil was an early selection in the Directives) he was reluctantly forced to the conclusion that, until the problems of navigation, target location and identification were overcome, area bombing, though not officially sanctioned, offered the best prospects for at least limited bombing success. Portal was never an advocate of 'terror' bombing. He was prepared to send his bombers to attack German cities but the aim was industrial destruction, disruption of communications, and the shattering of urban life, all combining to create a lowering of enemy morale. Portal's greatest assets were possibly his awareness that he often required guidance, a cool head, a readiness to listen to, consider, and accept or reject advice, and his ability to "balance what was desirable with what was possible as far as the Air Force was concerned."¹

Bomber Command, of course, was but one small part of Portal's massive responsibilities. It should occasion no surprise, therefore, that this section of his vast command should be largely left in the hands of senior officers whom he considered were best fitted to make judgements. Target selection for Bomber Command was done at high level with political, military and industrial input, but Portal was responsible for the strategic decisions. The tactical problems were the

responsibility of Air Chief Marshal Sir Arthur Harris at Bomber Command. Sadly Harris, all too often, allowed his tactical worries to override Portal's strategic decisions and the result was not always as the Air Staff wanted.

Air Vice-Marshal Norman Bottomley, as Assistant Chief of the Air Staff (Operations) and later, Deputy Chief of the Air Staff (DCAS), was the link in the chain connecting the Directorate of Bomber Operations (and up to seven other Directorates) to the CAS² and thence via the Parliamentary Under-Secretary of State for Air to the Secretary of State for Air; and finally to Churchill himself as the ultimate arbiter. It was Bottomley's responsibility to issue the Directives for Bomber Command (often drafted by staff in the Directorate of Bomber Operations) defining the strategic requirements and priorities for bombing operations determined by higher authority.

In 1939, however, Bottomley was among the majority of the Air Staff who lacked recent operational air experience: his last active posting, as Officer Commanding No. 4 (Army Co-operation) Squadron, had been completed in early January 1930 when he began study at the Imperial Defence College. He served on the North-West frontier in India between 1934 and 1938, but as a Group Captain it is unlikely he was regularly involved in air operations. In any case, the aerial subjugation of dissident tribesmen in Waziristan provided no significant preparation for a European bombing war in the 1940s. He was also seriously disadvantaged in that during his short tenure as Senior Air Staff Officer, Bomber Command, from November 1938 to November 1940, he remained wedded to the belief that Bomber Command was capable of living up to the pre-war expectations of a powerful day offensive by self-defending bomber formations. Heavy Wellington losses in three operations in December 1939 against German naval units failed to disabuse him. His argument was that good formation flying had confirmed RAF doctrine. "In our Service" he claimed, "it is the equivalent of the old 'Thin Red Line' or the 'Shoulder to Shoulder' of Cromwell's Ironsides."³

Bottomley was a good administrator and open to valid arguments; he was also capable of listening to and evaluating the opinions of those he appreciated had greater knowledge of a particular problem than he himself possessed. But unfortunately he lacked the drive and authority to force Harris into action along the lines set by Air Staff. A perhaps significant disadvantage for Bottomley was that he was junior in rank to Harris but, by appointment, in a position as either

ACAS(Ops) or DCAS, to issue orders to him. This would not have been a situation to Harris's liking. Nevertheless, an order signed by Bottomley had the authority of Portal and was therefore binding. The seniority problem, however, is perhaps why, on many occasions, letters from Bottomley to Harris often began, unsatisfactorily, "I am to request."

Late in 1940, Harris, then serving as DCAS, had come to appreciate that his Directorate of Home Operations, responsible for both defensive and offensive operations, was concentrating itself overmuch with defensive affairs. As an offensively minded bomber man Harris understood that if Bomber Command was to be an effective weapon then its policy, plans, and operations, would best be controlled by a separate Directorate. Ironically, in view of the later problems he would experience with staff in the new Directorate, on Harris's recommendation, the Directorate of Bomber Operations was established late in 1940 and its first Director, Air Commodore John Baker, MC, DFC was appointed in February 1941. Throughout the war, both Bottomley and Portal would rely heavily on the staff in the newly formed Directorate of Bomber Operations.

The immediate concerns of the Director and his Deputy were the operational policy and the direction of the air striking forces. They were also responsible for Air Staff policy relating to the composition, organisation, armament, and equipment of Bomber Command, and to relevant questions affecting air striking forces both at home and overseas. The Directorate was responsible, firstly through the Assistant Chief of Air Staff (Operations) until July 1943, and then the Deputy Chief of Air Staff, directly to the Chief of the Air Staff. In November 1941 the Director of Bomber Operations was still Baker and the Deputy Director, about to be replaced by Group Captain Sydney Bufton DFC, was Group Captain Aubrey Ellwood, DSC. Both Baker and Ellwood were considerably older than Bufton, having begun their flying careers in WW1 with the RFC and RNAS respectively. Neither had flown operationally in WW2. Baker was guided largely by Bufton but they formed an efficient, amicable, and productive relationship. Baker's support and encouragement of Bufton earned him Harris's dislike, but despite this he had a long and distinguished career in the Royal Air Force before retirement in 1956 as an Air Chief Marshal.

Sydney Bufton, a key figure in many of the disagreements between the Air Staff and Harris from 1942 to 1945, and central to many of the debates over policy

and implementation with which this thesis is concerned, possessed one major advantage over those senior to him both on the Air Staff and in senior operational positions: he had commenced his flying career when the majority of them were ending theirs. Additionally, despite the fact that he was in non-flying appointments during the 1930s — two years on an engineering course at Henlow, three years as an Engineering Officer in Iraq, three years at the Air Ministry, and one year at Staff College — he had kept in current flying practice. By June 1931, shortly before he commenced his course at Henlow, he had accumulated, while training, then as a bomber pilot (flying the two seater Hawker Horsley day bomber on No. 100 [Bomber] Squadron), and finally as a flying instructor, a total of 708 hours. His rating in the latter role was 'exceptional.' By September 1939, despite being in non-flying appointments, he had accumulated a total of just under 1,400 flying hours. With many flights lasting less than one hour it was an impressive accumulation of experience.

After his evacuation on 17 June 1940 from France, where he had served in the Headquarters British Air Forces, France, the Postings and Personnel section of the Air Ministry were agreed that Wing Commander Bufton (he had been promoted on 1 June 1940) would best serve the Royal Air Force by being posted as an Engineering Officer. He, however, had other ideas. Employing his flying experience as a lever, Bufton sought an operational appointment. He won that battle and was appointed to command No. 10 (Bomber) Squadron based at Leeming in Yorkshire and operating one of the so-called 'heavy' bombers, the Armstrong Whitworth Whitley. His heavy bomber experience in 1940 was nil and his night flying experience, just under four hours, had been spread over twelve years. Clearly, he had much to learn but training time in 1940 was in very short supply.

During his operational tour Bufton quickly came to appreciate the many problems facing the bomber crews in the early war years. More importantly, as will be discussed, he attempted to provide solutions not solely at squadron level but applicable to the bomber force as a whole. He continued his learning experience for a short time as Officer Commanding No. 76 (Bomber) Squadron, one of the first to receive Halifaxes, and then as Station Commander, RAF Pocklington, before posting to the Air Ministry in November 1941, as Deputy Director of Bomber Operations in the rank of Group Captain.

As one of the first officers with current operational bombing experience to be posted to the Air Staff, Bufton proved invaluable. Portal came to trust his judgement and opinions and relied heavily on him for advice on the many requirements of the bomber war. When identified needs conflicted with Harris's views, it was Bufton who was frequently required to provide Portal's ammunition, furnishing not only a critique for Portal but often, also, the lengthy response.

Prime Minister Winston Churchill also held Bufton in high regard and this is confirmed by the fact that he was invited to War Cabinet meetings and his opinion requested even in that exalted company. The Prime Minister clearly appreciated both the courage displayed by Bufton in challenging his seniors and the experience that he could bring to operational questions.

One other staff member in the Directorate of Bomber Operations who must be mentioned was Squadron Leader Arthur Morley. He had served as an observer in the RNAS and RAF in the First World War but had left the Service in 1919 and had been in private business until re-enlisting in November 1939. He was posted to the Directorate of Bomber Operations in February 1941 and worked closely with Bufton on the many problems that faced the Directorate over the next few years. In fact, on some questions, target indicators for one, he was the initiator. He was awarded an OBE and was appointed an Officer of the Legion of Merit by the President of the United States of America. Morley retired in 1954 with the rank of Group Captain.

Within the Directorate of Bomber Operations there were three sub-divisions; Bomber Operations 1, [B.Ops. 1], Bomber Operations 2(a), [B.Ops. 2(a)], and Bomber Operations 2(b), [B.Ops. 2(b)], each controlled by a Wing Commander. The officer appointed as B.Ops. 1 was responsible for bomber operational planning and for the selection of targets and also for liaison with Air Intelligence and the Ministry of Economic Warfare (MEW) regarding the enemy's industrial and economic situation relative to the strategic air offensive. B.Ops. 2(a) was concerned with current operations, operational analyses and returns, Air Staff policy relating to the composition, organisation and expansion of Bomber Command, navigational aids, blind approach systems, and night flying requirements. B.Ops 2(b) had responsibility for Air Staff policy relating to development and provisioning of bomber aircraft and all forms of offensive

weapons employed in bombing operations, including incendiary and gas weapons, mines, and depth charges.

The Air Staff day normally began at nine each morning with a conference. This meeting was attended by all operational directors and associated Assistant Chiefs of Staff together with those responsible for Signals, Armament, or other involved parties. Bottomley normally chaired the meetings, where briefings were provided by the various Directors relating to the previous day's activities. A discussion would follow, covering the problems, shortages, and requirements that had been revealed. These were then transferred to the appropriate Director for action.

At Bomber Command Headquarters the final major player to be considered is the then Air Vice-Marshal Arthur Harris. An examination of his early life provides important clues relating to his future behaviour and actions. From the age of about five, because his father was working in India, Harris was deprived of the guidance normally provided in a family environment. Boarding schools and foster homes became his life and thus, from an early age, he learned self-reliance and recognised that decision making was very much his personal responsibility. He also demonstrated that an Arthur Harris made decision was virtually irrevocable. In 1909, at the age of seventeen, despite opposition from his father who had now returned to England on retirement, Arthur Harris advised his family that he was emigrating to Rhodesia and he sailed early the next year.⁴

During the First World War Harris qualified as a pilot early in 1916 and served, initially, as a fighter pilot defending the London area from the Zeppelin attacks then being mounted. Without either training or instruction Harris was launched into the night defence of London. These, of course, were early days of flying and it was a very steep learning curve but it taught Harris a never to be forgotten lesson. As Seward, his biographer, explained,

It was this early experience of being expected to do the almost impossible things without any semblance of instruction that set his mind thinking about the value of proper training, a matter that was to become a fetish with him in his later life, and to which Bomber Command in World War II was to owe a great deal of its success. It was also at this time that the possibilities of the use of aircraft by night as offensive weapons were first sown in his mind.⁵

In the summer of 1917 Harris was a flight commander on No. 45 Squadron operating in the Ypres sector. He was thus an airborne witness to the slaughter that took place on the battlefields of Passchendaele. It confirmed for him not only the understanding reached by vast sections of the British public that wars were to be avoided, but also that, if they had to be fought, different methods were imperative. By 1937 the meaning of air power had crystallised for Arthur Harris. It now offered “an efficient, clinical, and even humane form of warfare, infinitely preferable to a strategy [he] later described as ‘morons volunteering to get hung in the wire and shot in the stomach in the mud of Flanders,’”⁶

In August 1919 Harris received a permanent commission in the rank of squadron leader but during his service on the North West Frontier of India in 1921 as Officer Commanding No. 31 Squadron, his acerbic tongue, criticising a lack of Army support, threatened his continued existence in the Royal Air Force.⁷ It was an early sign of his outspoken and brusque temperament which, far from mellowing over the years, meant that he rarely enjoyed the respect of senior officers in either the Army or Royal Navy. He also showed during those early years, both in India and later in Iraq, that once he had formed an idea it was pursued relentlessly. His own conclusions were always accorded heavy personal investment which perhaps explains his concentration on bombing and night flying requirements, contrary to Air Staff policy, in those early days. He was simply following paths of his own choosing. It was a sign of things to come.

In 1934 Harris was appointed Deputy Director of Plans in the Air Ministry, replacing Portal who was posted to Aden Command. John Terraine, among many, has made clear that in the early 1930s there was “a nationwide mood of complete revulsion from the First World War . . . hope for the future, accordingly must depend on the League of Nations and on general disarmament.”⁸ Such views conflicted dramatically with those held by Harris who had long believed that further struggle with Germany was inevitable. His efforts in Plans, therefore, were directed at building a bomber force capable of achieving not only a more positive result but also avoiding the trench warfare that had been the cause of such enormous casualties in the First World War.

By 1935 it had been appreciated that the fighter aircraft then being developed would be faster, would possess greater fire power and also be more manoeuvrable than the short range, small bomb load, light bombers currently in

RAF service. It was therefore decided that the new generation of bombers would be self-defending and Harris urged that “in view of the importance which the Germans attached to the long-range bomber we should concentrate our efforts on producing the type of aircraft which would give the best performance both in range and bombload.”⁹ He strengthened his argument for a heavy bomber force by pointing out the equipment essential for long-range operations would be best contained in heavy bombers. Harris was thus one of those responsible for the Air Staff specifications B12/36 and P13/36, prepared in 1936, which ultimately resulted in the Stirling, Halifax, Manchester and possibly the best heavy bomber produced in the Second World War, the Avro Lancaster.

Naturally there was conflict, particularly with politicians who controlled the purse strings, but Harris stood firm in his beliefs.

His creed had become that espoused by General Jan Smuts in the Report he prepared in August 1917 entitled “Second Report of the Prime Minister’s Committee on Air Organization and Home Defence Against Air Raids” in which he had asserted that the air force would be best employed as an independent means of war operations. The Report made clear that with regard to air power

As far as can at present be foreseen there is absolutely no limit to the scale of its future independent war use. And the day may not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war, to which the older forms of military and naval operations may become secondary and subordinate.¹⁰

Many, including Trenchard, Saundby and Harris, all voiced their approval of the Smuts’ Report. Hans Rumpf, a German official, later, and from a different perspective, asserted that, like Douhet, it had been a signpost pointing the way for the development of air power and its enormous potential. His vantage point to view the effects of air power during the Second World War had been as the German Inspector General of fire services. Naturally, his was not an approving voice but at least he did not debate the Report’s accuracy.¹¹

Although Harris believed that much of his energy as Deputy Director of Plans was spent working against time and misguided public and political opinion, rearmament, he argued, was essential. Fortunately, under the somewhat lax

leadership of the Chief of Air Staff, Sir Edward Ellington, he was accorded “full rein to develop his rather immoderate views . . . Harris’s view that the bomber was a decisive weapon in war became more and more prominent in Air Staff papers.”¹²

In 1936 Harris and two other Joint Planners, Captain Tom Phillips (destined to lose his life when the *Prince of Wales* was sunk in December 1941) and Colonel Sir Ronald Adam, were required to produce a paper for the Joint Planning Sub-Committee of the COS Committee using as guidelines the situation they would envisage should war with Germany break out in 1939.¹³ The document they produced proved to be remarkably prescient. France was ruled out as a potentially strong ally; Germany was expected to seize Holland, Belgium and France, and their paper made clear that greater attention to defence measures was essential.

One important feature of the discussions of Harris, Phillips and Adam, in view of Harris’s position from 1942, centred on the best employment of the bomber force in a counter offensive. They rejected any suggestion that German morale could be influenced by an offensive directed against cities and neither were they able to identify any potential bottleneck industrial targets. As well, the *Luftwaffe* and its support structures provided such a plethora of potential targets that it had to be ruled out of contention. Where they did reach accord was that, in the event of war, it was essential that British industries were developed while every effort was made to restrict those of Germany. Perhaps Harris, from 1942, saw his area attacks not only being attacks on German cities and morale, but also the only tangible way to reduce German industry.

The Planners were also aware that it would be a long and intense struggle. The Allies, the Paper argued,

must plan for along war . . . we are faced by an enemy who has fully prepared for war on a national scale, has superiority in air and land forces, and possesses the initiative . . . we must be prepared to face an attempted knock-out blow . . . we must concentrate our initial efforts in defeating this attempt, which, if in the form of an air attack on great Britain may well subject us over a long period to a strain greater than we have ever experienced . . . we must . . . rely on our industrial and economic power, backed by the resources of the Empire, eventually to bring a counter offensive against Germany.¹⁴

This Paper confirmed the need for a bomber force equipped, as far as was possible, with heavy bombers “designed to provide superiority in range and bomb load rather than mere equality of numbers.”¹⁵ Unfortunately, under the leadership of the new CAS, Sir Cyril Newall, from September 1937, the parity policy urged by Harris and the new Deputy Director of Plans, Group Captain John Slessor, had “simply become an expansion of inefficiency.”¹⁶ Training was reduced, crashes increased, aircraft were in short supply, and aircraft were being delivered to squadrons significantly under-equipped and usually requiring extensive modification. Harris’s concern was expressed in a note to Sir Edward Ellington, the recently deposed CAS, when he wrote,

What remains to me of conscience pricks, if ever, on raking over the embers of a heavy bomber and inadequately experienced crew. The best efforts to provide careers before now have only provided coffins.¹⁷

By September 1939, although the wheels had been set in motion in the mid-1930s in the right direction, the establishment of a heavy bomber force, Bomber Command and the Royal Air Force was only a “shop window” air force and not the deterrent force which had been planned.

By 1937, Air Commodore Harris, now serving as Air Officer Commanding No. 4 Group, was becoming increasingly concerned at the low efficiency of his command. The inadequate training, he pointed out to Ludlow-Hewitt, meant that the crews were largely unable to even operate the sub-standard equipment with which their aircraft were equipped. Servicing was also a problem because the Air Ministry had simply not provided the necessary facilities and this difficulty was compounded by equipping bomber squadrons with an aircraft such as the Whitley which required a major servicing after only twelve long range flights. At the same time Harris became increasingly concerned at the low standard of navigation training being provided. Pilots at this time were, of course, the only crew members employed on a full time basis. Observers, wireless operators and air gunners were all ground tradesmen who flew when required and received (in 1934) an extra six pence a day for their efforts.¹⁸ His views were amplified by Sir Edgar Ludlow-Hewitt in 1938 when he advised a doubting CAS that he was unable to provide a date when he believed Bomber Command would be ready for war.

Ludlow-Hewitt thought highly of Harris who, he observed,

has an exceptionally alert, creative and enterprising mind balanced by long practical experience together with energy, force of character to give his ideas practical shape and realisation. He has rendered great service in respect of improvements in the technical equipment of the aircraft in his command, and also in the creation and organisation of novel methods of dealing with extremely difficult problems of crew training.¹⁹

They were all attributes that would be desperately needed by Harris when, in February 1942, he became Air Officer Commanding-in-Chief, Bomber Command.

On 11 September 1939 Harris, now an Air Vice-Marshal, was appointed AOC No. 5 Group and he immediately showed the consideration for his crews that became his hallmark, despite the fact that throughout the war he met them but rarely. Crew comfort and defensive armament in the Handley Page Hampden, with which his squadrons were equipped, in his eyes, had been too largely ignored. According to Harris the Hampden possessed but two virtues — it had reliable engines and was available in numbers.

Harris was well aware of the limitations imposed on his Group by being equipped with Hampden aircraft, together with the fact that many of his crews had received limited and shortened training, so he immediately instituted a training programme concentrating on long range flights in preparation for what he believed would come. He also realised that the Hampden could be used for mine laying and No. 5 Group took an early and leading part in these operations. They commenced operations on the night of 13/14 April 1940 in the North Sea and the 1,500 pound mines, parachute equipped, were responsible for sinking twelve German vessels during the short Norwegian campaign.²⁰

As can be seen in these introductory notes relating to Harris there is much to admire in his career up to late November 1940. As Christina Goulter observed,

no one can accuse Harris of lacking constancy of purpose. He had been a staunch advocate of bombing since the early 1920s, and demonstrated an unshakeable faith that this was the proper role for air power.²¹

In 1941 Harris, during his brief tenure as DCAS, remained primarily concerned with matters of significance relating to Bomber Command. Aircrew training, the provision of navigational and bombing aids and the proposed eventual introduction of four-engined bombers, all received his almost undivided attention. In April he became involved in the selection of targets. In a Minute to Churchill he suggested that Berlin, Hamburg or Cologne should be bombed and that :

Our objective should be to do the maximum damage and destruction to the populated areas, as a demonstration of that ruthless force which we shall have to employ against Germany sooner or later if we are to get the full moral effects out of our air defensive.[sic]²²

Harris was widely experienced in bomber matters, hard working, and enthusiastic. Nevertheless, with regard to his appointment as Air Officer Commanding-in-Chief, Bomber Command, there are two outstanding questions. Why was he not appointed to the position on 5 October 1940? Instead, he was appointed Deputy Chief of the Air Staff and a much less bomber-experienced officer, Air Marshal Sir Richard Peirse, was given the post. Perhaps it was simply a matter of seniority but the appointment gives every indication that there was a great deal of uncertainty among the senior Air Staff as to who would perform well in the demanding requirements of the bomber war. Indicative of the uncertainty displayed in the appointments of senior officers is that Harris, on his return from the United States as Head of the RAF Purchasing Commission in May 1938, had been informed that he was to be posted to Headquarters Fighter Command, to become Sir Hugh Dowding's Senior Air Staff Officer. That posting was cancelled and instead he spent the last year of peace as AOC Palestine and Transjordan. Furthermore, if Harris was such an outstanding prospect as the bomber leader, why was he sent to Washington in May 1941 as Head of the British Air Staff? Were officers actually groomed for particular posts, or was the one who was simply available appointed?

Air Chief Marshal Sir Arthur Harris's appointment as Air Officer Commanding-in-Chief, Bomber Command, in February 1942, came at a crucial time. The bomber war, as the Butt Report of August 1941 had confirmed, was not

going well and even Prime Minister Winston Churchill, who had earlier argued that an “absolutely devastating, exterminating attack by very heavy bombers”²⁴ provided the only way to win the war, appeared to be losing confidence. Bomber Command required a leader unsullied by earlier failures and Harris, although he had not been involved with the bomber offensive since late 1940, appeared to Portal to be the man. Churchill agreed with Portal’s nomination and Harris’s appointment was confirmed. Churchill, perhaps, identified in Harris characteristics similar to his own — an aggressive nature, stubbornness, and a candour to the point of rudeness. Neither Churchill nor Harris was a good listener. Each preferred to offer his solution to difficulties as the only possible avenue to be followed. However, at the many private meetings with Churchill at Chequers during 1942 and 1943, it was Harris who was thrust into the background. Churchill dominated the conversations and Harris later admitted that “he found it more satisfactory to listen than to argue.”²⁵ Those who had direct dealings with Harris at Bomber Command Headquarters found it prudent to adopt a similar position.

When Harris was appointed Air Officer Commanding-in-Chief, Bomber Command, in February 1942, he inherited the area bombing programme espoused by his superior Portal and tacitly supported by Churchill. Only occasionally, for the duration of the war, would he be compelled to relax that attachment to what he viewed as a war-winning policy. During 1942 and 1943 it is widely agreed that area attacks offered Bomber Command the best prospects for reducing the enemy war potential, and lowering morale. But by 1944 the parameters had changed since Bomber Command then possessed the capability of delivering heavy, accurate attacks on precise targets. Harris, however, remained obsessed with area bombing and his obsession not only threatened Allied strategic planning but also further alienated his superiors in the Air Ministry.

At the beginning of his tenure as AOC-in-C, Bomber Command, Harris was a considerably less controversial figure than he later became. The Air Staff early appreciated that the bomber force lacked both the numbers and equipment essential for a precision bombing campaign and agreed, in 1942, that area bombing, as a stop-gap measure, offered the only way to both lower German morale and create a measure of destruction to the German war effort. Harris was thus strongly supported by Churchill, the Air Staff, and the general public in his early area bombing campaign. Churchill and the Air Staff were supportive

because at that time nothing else was available while the public was pleased that at last it was the Germans who were on the receiving end rather than themselves. Importantly, despite the heavy losses they were suffering, he also possessed the confidence of the bomber crews. Support for Harris was thus not fleeting. It was, however, based on insecure foundations: for too long the claims of destruction being achieved vastly exceeded the damage actually being created. Thus support at the Air Ministry, in particular, waned dramatically when it was realised that Harris was obsessively following a path which was in conflict with Air Staff aims and better options had become available.

At Bomber Command Headquarters Harris was a bully. As he admitted, seemingly with pride, he did not invite discussion, but simply gave orders. His staff was fully aware that dissent meant dismissal. His power and even the loyalty of his Command

hinged on this unequivocal ability to sack, or to give and take away acting rank of many of his officers: also his ability to influence the award of honours and to discredit or disgrace any of his personnel was much feared.²⁶

Evidence of this will be seen with regard to the Path Finder Force, where, as will be made clear, the support opposing its formation that he obtained from his Group Commanders was virtually agreement under duress.

It early became clear to staff in the Directorate of Bomber Operations that with his area bombing programme Harris was deceiving himself. Lessons he should have learned he ignored, or rejected, because they were not what he had anticipated. Sadly, according to Air Vice-Marshal Kingston-McCloughrey, he also deceived the crews of Bomber Command. Harris's Blue Books of German cities showed, he claimed, the effectiveness of the bombing they had undergone. The crews were led to believe, Kingston-McCloughrey asserted,

that they were fast defeating the Germans at home, and indeed, winning the war by themselves. Had the real truth of the ineffectiveness of their bombing become known to them there would have been a serious danger of mutiny. It may be true to some extent Harris was misled himself, but he was aware for sometime that the bombs were going wide yet he resisted independent investigation of this failure to hit the target intended.²⁷

Very few bomber crews ever saw their Commander in Chief but they believed that their role and sacrifice was crucial and that in Harris they had a leader with victory in his sights.

With waning support from both Churchill and Portal, Harris remained as AOC-in-C, Bomber Command, until the end of the war. His perceived path to victory required the destruction of German cities, together with the industries they contained, and the de-housing of the enemy civilian population. His dogged pursuit of victory employing area bombing, contrary to the wishes of his superior, meant dispersion of the bomber effort.

Harris's link with his staff was maintained through the offices of his SASO, Air Vice-Marshal Saundby. His role, he appeared to assume, was to fend off interference from Bomber Command staff, the Air Ministry, scientists, industrialists, and politicians. His appointment to air rank in the Royal Air Force was probably unique in that, apart from a brief spell, in 1925, when he was posted to command the Aden flight of Bristol fighters implementing air control, he most often was in a subordinate role and frequently serving under Harris. Saundby had a relaxed and approachable manner but had he been able to provide challenges, and possessed the moral strength to question decisions, his rightful duty, his service as SASO would have been of considerably greater value. Unfortunately, the long time that he had served in positions subservient to Harris had made him well aware of his own vulnerability. No doubt he was right for Harris but he was wrong for both Bomber Command and the bomber offensive.

The disagreements and arguments between the Air Staff and Harris during the Second World War, although examined individually in this study, frequently over-lapped. That concerning the relative efficacy of incendiary versus blast weapons was, for instance, never entirely put to rest. Likewise, the Path Finder Force question, although seemingly solved in August 1942, by Portal's insistence that the force be formed, never became fully a *fait accompli* because Harris subverted its implementation. Schweinfurt and German ball bearings also provided on-going confrontations between Harris and the Air Staff beginning in April 1942, while German oil facilities were another target system that provoked extended arguments virtually throughout the war.

The problem was that Harris, despite the evidence of precision shown by the pre-invasion railway marshalling yard attacks, continued to regard the bomber

force as a bludgeon, refusing to recognise that by early 1944 it had become a rapier. Harris never departed from the view that the war could be won by the devastation of German cities and the undermining of the morale of the German people. The tragedy was that for too long his views were permitted to prevail over those of the Air Staff.

Despite the on-going nature of several of the arguments between Harris and the Air Staff this thesis has compartmentalised them into separate chapters in an effort to provide continuity and avoid becoming side-tracked — as frequently occurred in the differences that arose between Harris and Portal during the war. The classic example, to be discussed more fully in a later chapter, is the disagreement between the two authorities in April 1944 relating to Bufton's role in the formation of the PFF. The provision of separate chapters for the disagreements considered in this thesis means that each can be examined chronologically without any requirement for time vaults back to earlier, unrelated confrontations.

The primary sources employed in this study are principally the papers of Portal, Harris, Bottomley and Bufton. Other studies have concentrated on the Portal and Harris Papers but have largely ignored Bufton's, with the result that the differences between the Chief of the Air Staff and his subordinate Harris have been insufficiently addressed. This thesis is an attempt to remedy that omission. Bufton's role in Portal's decision-making regarding the use of incendiary weapons, the Path Finder Force, German ball bearings and German oil facilities, was crucial.

With regard to sources mention must be made of the thirteen tapes made in 1972 by Dudley Seward in extended interviews with Harris. They were never used by Seward in his biography of Harris, nor as far as is known, by any other author writing on the bomber offensive in general, or Harris in particular. The reason is not hard to find. They are self-incriminating. Harris's admission that from the day of its inception he worked against the Path Finder Force in order to fulfil his own plan of a Path Finder Force in every Group, had it been known, should have required his instant dismissal. In interview, Harris may have indulged in exaggeration and hyperbole, but surely there was no reason for him to have been anything less than truthful, and the veracity of the tapes is borne out by the fact that they provide confirmation of the actions that he took during the war. They do not display Harris in a good light. It is thus possible to understand the reason for

the extended embargo that he placed on the publication of the biography in preparation by Seward: nothing was to be published until after his death. Harris clearly wished to minimize his failings, even in such a matter as a failed first marriage, which in Dudley Seward's biography, *'Bomber' Harris*, is not even mentioned.

What restrictions, if any, were subsequently placed on these revealing tapes is not known. If they were available to other historians of the bomber war but not used, then it must be argued that they were overly selective in the evidence they presented. The picture that they have presented of Harris is incomplete and seriously lacking in detail.

This thesis attempts to provide the detail of the arguments between the Air Staff and Harris between 1942 and 1945, relating specifically to the bomber war, from an examination of the correspondence of the main participants. Most published accounts of the problems experienced largely give the impression that Portal and Harris acted in isolation. In fact, in Portal's case, he was very dependent on advice — advice and guidance most frequently provided by his trusted Director of Bomber Operations, Sydney Bufton. If at times the study makes Bufton a central figure that is because, as an adviser to Portal, he was vital. Many of Bomber Command's problems stemmed from the fact that those in command had but an imprecise knowledge of techniques, weapons, and equipment, and that ignorance was displayed in the strategies, tactics, and even the policies, they attempted to employ. Bufton provided the voice of reason based on operational experience: his role was crucial.

With regard to Harris, many have written in praise: in places it is praise well merited. His authorised biographer, Dudley Seward, however, offers no word of criticism. One reviewer of Seward's work argued that the author should have provided

a more subtly coloured presentation of his former commander-in-chief. That he chose instead to write so uncritical and adulatory a work is a very great pity for Harris was a most remarkable leader, and deserved to be presented in Oliver Cromwell's words 'warts and all.'²⁸

This thesis, without apology, is also thus a ‘warts and all’ portrayal of Harris in his many arguments with the Air Staff between February 1942 and May 1945.

Although the Allied forces eventually achieved victory in Europe in May 1945, two questions present themselves. Firstly, could it have won earlier? Secondly, in parallel with the first question, would it have been won earlier had Harris been replaced as AOC Bomber Command when clearly his views concerning the application of the bomber offensive differed so radically from those of the Air Staff he was required to serve? No final answers are possible and arguments will continue, but it is hoped that this thesis will provide the grounds for a more informed judgement to be reached.

End Notes

Note: All National Archive material is identified in all End Notes as “PRO AIR” etc., as it was obtained prior to the name change of the Public Record Office to National Archives.

¹ Denis Richards, *Portal of Hungerford*, (London, 1977), p. 98.

² In August 1943 Bottomley was promoted to Air Marshal and reappointed DCAS (coincident with the revival of the same title) with similar but widened responsibilities to those he had held as ACAS (Ops).

³ Sir Charles Webster and Noble Frankland, *The Strategic Air Offensive Against Germany 1939-1945*, (London, 1961), Vol. I, p. 194. Perhaps a more apposite reflection

would have been the rarely quoted remark of General Bosquet at Balaclava on 18 October 1854, “*C’est de la folie.*” Hereafter, Webster and Frankland plus volume number

- ⁴ Henry Probert, *Bomber Harris*, (London, 2001), p. 28.
- ⁵ Dudley Saward, ‘*Bomber Harris*, (London, 1984), p. 15.
- ⁶ Malcolm Smith, *British Air Strategy between the Wars*, (Oxford, 1984), p. 64.
- ⁷ Probert, p. 49.
- ⁸ John Terraine, *The Right of the Line*, (London, 1985), p. 7.
- ⁹ Neville Jones, *The Beginnings of Strategic Air Power*, (London, 1987), p. 98. See also Webster and Frankland, Vol. I, p. 75.
- ¹⁰ H. A. Jones, *The War in the Air, Appendices*, (Oxford, 1937), p. 10.
- ¹¹ Barry D. Powers, *Strategy Without a Slide Rule*, (London, 1976), p. 92. See also, Hans Rumpf, *The Bombing of Germany*, (London, 1963), pp. 226/7.
- ¹² Malcolm Smith, p. 39.
- ¹³ H. Montgomery Hyde, *British Air Policy between the Wars 1918-1939*, (London, 1976), p. 391. See also Wesley K. Wark, *The Ultimate Enemy*, (Oxford, 1985), pp. 195-202.
- ¹⁴ Hyde, pp. 391-2.
- ¹⁵ R. B. Wernham, *Pre-War Evolution of Bomber Command 1917-1939*, (London, no date), p. 120. Royal Air Force Narrative, Vol. I, hereafter PRO AIR 41/39.
- ¹⁶ Malcolm Smith, p. 276.
- ¹⁷ Ibid., p. 276.
- ¹⁸ John James, *The Paladins*, (London, 1990), p. 261.
- ¹⁹ Probert, p. 95.
- ²⁰ Denis Richards, *The Hardest Victory*, (London, 1994), p. 36.
- ²¹ Christina Goulter, ‘Sir Arthur Harris: Different Perspectives’ in Gary Sheffield and Geoffrey Till, *The Challenge of High Command*, (Basingstoke, 2003), p. 127.
- ²² Charles Messenger, ‘*Bomber Harris and the Strategic Bombing Offensive, 1939-1945*, (London, 1984), p. 46.
- ²³ Martin Middlebrook, ‘Marshal of the Royal Air Force Sir Arthur Harris,’ in Field Marshal Sir Michael Carver, (ed.), *The War Lords*, (Boston, 1976), p. 319.
- ²⁴ Churchill, in a note to Lord Beaverbrook, Minister of Aircraft Production, 8 July 1940.

Quoted in Martin Gilbert, *Finest Hour*, (London, 1983), p. 656.

²⁵ Probert, p. 133.

²⁶ E J Kingston-McCloughrey, 'Leadership with Special Reference to World War II,' in *Royal Air Forces Quarterly*, Autumn, 1967, p. 208.

²⁷ *Ibid.*, p. 208.

²⁸ David Gunby, 'Harris of Bomber Command,' in *Christchurch Press*, 2 March 1985, p. 20.

Chapter One

Between the Wars

Although I will argue in later chapters that the bomber war was poorly managed, it is first necessary to provide the reasons why, in 1939, Bomber Command was so ill-prepared. How was it that the Air Staff, whose primary function was to prepare the RAF for war, apparently failed so dismally? There is no simple answer. It is the story of a struggle between those in the Services who had identified some of the problems that required attention and those in government who controlled the purse strings. The priorities accepted by successive governments were never necessarily those nominated by the military authorities. It was also clear to those in both politics and the military that there was no profit in war. Serious efforts were therefore made at Geneva between 1932 and 1934 not only to ban aerial bombing but also to outlaw military aircraft entirely. Peace, it was hoped, would be maintained by disarmament. Although the Geneva meetings continued into 1934, Germany's final withdrawal in October 1933 had made clear that any talk of either the abolition or reduction of armaments had lost its relevancy. The decision for offensive rearmament in Britain, accepted reluctantly, was made only just in time.

On Armistice Day, 11 November 1918, which for all practical purposes marked the end of the Great War, the Royal Air Force was arguably the most powerful tactical air force in the world. It also included a very small strategic element, the Independent Force, formed in June 1918, under Major-General Sir Hugh Trenchard.¹ In October 1918 the Royal Air Force had on charge a total of 22,171 aeroplanes.² Comparable numbers for France and the United States of America were 13,100 and 17,400 respectively.³ But the pre-eminence of the Royal Air Force was not to be long maintained. Its break up had actually begun earlier, with the majority of the training schools having disappeared by August 1918, outstanding contracts having been cancelled, and much equipment simply destroyed. For the ninety-nine squadrons on the Western Front disbandment began in February 1919 and by 2 April the number of squadrons in France, Belgium and Germany only totalled forty-four and many of these existed in name only having been placed on a care and maintenance basis with a much-reduced

staff. After the signing of the Treaty of Versailles on 28 July 1919, squadron closures proceeded apace such that by the end of October 1919 there was only one squadron serving with the Army of the Rhine. By April 1920 the Royal Air Force had a grand total of only thirty-three widely dispersed squadrons.⁴

The question on many lips was what was to become of the Royal Air Force, whose independence had only been secured on 1 April 1918? Was it to remain an independent and viable force or were the aircraft and crews to become ancillaries of either the Royal Navy or the Army? Churchill's appointment in January 1919 as both War Minister and Secretary of State for Air, together with the removal of Major-General Sir Frederick Sykes as the Chief of the Air Staff (CAS) only two months later, were both interpreted as danger signs for those anxious to retain air force independence. Trenchard's reappointment as CAS also provided another reason for concern because for much of the war he had, as a supporter of General Sir Douglas Haig, seen the air force's role as pre-eminently army support.

On 9 December 1918 Sykes, then serving as CAS, produced his vision of the future for the Royal Air Force, the *Memorandum by the Chief of the Air Staff on Air-Power Requirements of the Empire*. It was a grandiose and wide-ranging scheme totalling sixty-two Service and ninety-two cadre squadrons based throughout the British Empire.⁵ No attention was given by Sykes to economics in his plan, although in his book, *From Many Angles*, he estimated the establishment cost to be £21,000,000.⁶ Not surprisingly, in view of the post-war political and public malaise and the economic straitjacket, his plan was rejected. Nevertheless, a closer reading of his plan would have shown that there were some elements worthy of consideration. His call for state assistance and a form of state control for commercial aviation — ruled out by Churchill's comment that "Civil Aviation must fly itself"⁷ — might, for instance, have prevented the rapid decay of the British aircraft industry that so much delayed Royal Air Force expansion during the 1930s.

Churchill, as Secretary of State for Air, eagerly sought the return of Trenchard as CAS. Sykes was transferred to a civilian post as Controller-General of Civil Aviation in April 1919 and, after considerable cajoling from Churchill, Trenchard accepted the appointment. In response to a request from Churchill, he produced a paper detailing his plans for the peacetime Royal Air Force which was presented to Cabinet in November 1919. It appeared as Command Paper (Cmd.)

467 on 13 December 1919. Trenchard, in his preamble, compared the Royal Air Force to Jonah's gourd, declaring that

The necessities of war created it in a night, but the economics of peace have to a large extent caused it to wither in a day, and we are now faced with the necessity of replacing it with a plant of deeper root.⁸

Trenchard's aim was to confirm the independence of the Royal Air Force, develop an *esprit de corps* and establish a sound base from which rapid expansion could occur should another conflict arise. The major costs in his plan were bricks and mortar: the establishment of a cadet college, an air staff college and a school for apprentices. It was estimated that the costs for the first year would be £15,000,000.⁹ It was, perhaps, not a coincidence that the Air Estimates for 1920/21 were for just over £21,000,000 million, less nearly £6,000,000 for war liabilities – a nice balancing of the books.

The air element detailed in Trenchard's vision of the future Royal Air Force called for a total of twenty-four and a half squadrons, with eighteen serving abroad in India, Egypt and Mesopotamia, plus one divided between overseas naval stations. One squadron would work with the Army and two and a half with the Navy, while responsibility for the defence of Great Britain would rest with the remaining two squadrons. One author¹⁰ described himself as *stupéfié* by the plan, but largely it was welcomed because it was seen as being economically viable and war appeared a very unlikely prospect.

Lloyd George's Coalition Cabinet in 1919 also welcomed the prospect of a long peace. Certainly there were military side shows in Siberia and Archangel, a garrison was required in Ireland, and large forces were still necessary in the Middle East, but the prospect of an all-out war with a major power appeared most unlikely. With the Service Ministers and particularly the First Lord of the Admiralty exerting pressure for guide lines as to future military policy, the Cabinet finally reached agreement. On 15 October 1919 they announced that their assumption was

for framing the revised estimates, that the British Empire will not be engaged in any great war during the next ten years, and that no expeditionary force is required for this purpose.¹¹

As a broad guide the “Ten Year Rule” became a useful tool for reining in Service expenditure. It was also accurate in its summation — there was no major war in the first ten years. No immediate impact was thus made on the R.A.F. by the “Ten Year Rule” but from 1925-26 its influence became more marked. Service policies were affected. On 28 June 1928, Churchill, as Chancellor of the Exchequer, expanded the parameters. From that day, he confirmed, the ten years would begin again each morning. The self-perpetuating “Ten Year Rule” had been invoked and was approved by Cabinet. It became the excuse for a succession of cabinets to defer increased spending by Service chiefs and put brakes on expansion and development. It was finally rescinded on 15 November 1933.¹²

What the Royal Air Force required in 1919 was a *raison d'être*. This was offered Trenchard in May of that year when he volunteered his force to remove once and for all the twenty year threat posed in British Somaliland by Seyid Mohamed Abdille Hassan, perhaps better known as the ‘Mad Mullah’. The campaign, which began on 21 January 1920 with twelve De Havilland DH9 two-seat day bombers, twenty-one vehicles and 192 support staff, backed up by a single battalion of the King’s African Rifles with a detachment from an Indian infantry battalion assisted by the Somaliland Camel Corps, was completed in less than three weeks at a cost of only £30,000. Estimated costs, had the army been employed as the primary weapon, were £6,000,000 to £7,000,000.¹³

The Colonial Under-Secretary, Colonel Amery, announcing the successful conclusion of the Somaliland campaign to the House of Commons, pointed out that it had been the “first time that the aeroplane has been deliberately employed as the primary striking instrument, and not merely as an auxiliary weapon.”¹⁴ As such, of course, it was a victory for Trenchard’s advocacy for the employment of the RAF as a controlling agent of overseas territories, at considerably reduced costs. Although it was Trenchard’s first success in identifying and confirming a *raison d'être* for the RAF, there were still those, mainly in the Army, prepared to argue that the Somaliland campaign had not been a purely Air Force affair.

In a letter to General Sir Henry Rawlinson, the Commander-in-Chief India, Sir Henry Wilson, Chief of the Imperial General Staff, declared that he did not believe that Churchill’s “ardent hopes of being able to govern Mesopotamia with hot air, aeroplanes and Arabs”¹⁵ were capable of realisation. Trenchard was also

having other difficulties. His battles with the navy continued. Moreover, he was being assailed in the Northcliffe press (whose enemy he had become in late 1917 when he refused to join Lord Northcliffe and his brother, Lord Rothermere, in an attack on Haig) on the grounds of incompetence. Trenchard's critics, nevertheless, were losing these particular battles. His efforts had been noted by cost-conscious politicians, notably Churchill in his dual role as Secretary of State for both War and Air, and in 1920 Trenchard was invited to prepare plans for the air policing of Mesopotamia. Ironically, the financial restraints which post-1919 had reduced the RAF to but a shadow of its previous strength, were now to provide the means for its deliverance. Equally ironically, Churchill in his dual political role, now faced the difficult task of advising Army leaders that, while their budgets would be reduced, the RAF's would rise.

Although it was not until 1 October 1922 that the RAF was given supreme command of all the forces in Mesopotamia, now renamed Iraq, its worth had been confirmed. The RAF in those early years in Iraq had shown that it possessed the ability to strike, at short notice, rebel held areas largely inaccessible to ground forces; could widely and rapidly distribute propaganda leaflets; could provide early intelligence; and accurately deliver punishment. As an instrument of control, the RAF had shown itself to be swift, and, as far as enemies were concerned, unpredictable. Equally importantly, by the establishment of the Cairo — Baghdad air mail service, and the construction of landing grounds in many areas of the Near East, the first links in the chain that would one day become the 'All-Red' route to the Far East, had been formed.

The retention of the air force, as a controlling agent, made sound economic sense. Importantly, Trenchard had found a future for his force in a continuing, independent, peacetime role as a colonial controlling agent. Policing, however, although it provided peacetime employment for the RAF, provided no justification for the long-term retention of the third, independent, military arm. The RAF also required a vocation and for a military force that was provided by war.

War is the primary function of military forces. They must prepare for war and, when required, fight wars. What role did Trenchard foresee for the Royal Air Force? During the Great War, although he was a believer in the value and importance of the offensive, he had seen the primary role of the Royal Flying Corps (RFC) as army support. As General-Officer-Commanding (GOC) of the

Independent Force from 6 June 1918 he followed generally similar lines. His force was never large, never more than ten per cent of the total British air strength in France,¹⁶ and his bombers were more frequently employed in attacking tactical rather than strategic targets. The offensive was only carried into Germany when by so doing the fighting efficiency of the flying corps at the front was not impaired.¹⁷

Although Trenchard became a hard-headed political opportunist following the intrigues in which he became embroiled in 1918, he was never fluent in either speech or writing. But he was aware of the power of the press. From June 1918 he waged an efficient public relations campaign. Regular and frequent press releases were provided by his headquarters in France and he complained bitterly if they were either ignored or not published verbatim in major English papers. He painted a glowing picture for the public of the effectiveness of the strategic bombing campaign. It was, however, only a picture of future possibilities.

As early as November 1917 Trenchard had made clear his expectations of strategic bombing. "That purpose" he declared,

is to weaken the power of the enemy both directly and indirectly — directly by interrupting his production, transport and organization through infliction of damage to his industrial, railway and military centres, and by compelling him to draw back his fighting machines to deal with the menace — indirectly by producing discontent and alarm amongst the industrial population . . . Actual experience goes to show that the moral effect of bombing industrial towns may be great, even though the material effect is, in fact, small.¹⁸

Despite his war-time propaganda concerning strategic bombing, Trenchard, post-war, made no great claims as to the success of the limited bombing programme carried out by the Independent Force. Difficulties had been experienced with the weather, accurate navigation had been a problem because of both weather and a lack of aids, bomb sights had been inadequate, and no attempt had been made to investigate the effects that various bombs would have on particular target systems. In addition, much of the bombing effort had been wasted on German aerodromes in an attempt to reduce bomber losses due to German fighter activity. The use of incendiary type weapons against aerodromes should never have been expected to produce significant results.

Trenchard's despatch on the work of the Independent Force was issued on 1 January 1919. Despite the appalling weather, his small force had carried out 142 raids, fifty-seven on targets in Germany.¹⁹ His aim had been to attack as many large industrial centres as possible because he did not believe that his force had the ability to destroy totally any one large centre, or disperse its industrial population. Even with a larger force, he argued, it would not have been practical unless the war had been prolonged for at least another four or five years. So much for the material damage. Bombing, however, he claimed, had had a significant effect on enemy morale. Without reference to either figures or examples, and after no in-depth investigations, he asserted that the morale effect of bombing against material results stood as twenty to one.²⁰ It was to be a much quoted figure.

Bombing surveys carried out independently from March to May 1919 in Germany by both British and American teams confirmed that Allied aircrew claims of accuracy and material damage were largely wishful thinking. No measurement was made by either French or American investigators of the effects that bombing had had on enemy morale. For the British survey team that investigation had been given first priority. Trenchard was not the first to target enemy morale. The War Office in January 1918 had issued a paper entitled *Memorandum on Bombing Operations*. Targets were to be attacked until they were either destroyed or the morale of the workers so disturbed that production was reduced. Bombing, the paper continued, will produce the maximum morale effect if it is repeated at short intervals.²¹

Enemy morale of course had been Trenchard's target since taking over the Independent Force and his operational concept appears to have been supported by his superiors in the Air Ministry in London.²² Had Trenchard retired in 1918 the importance attached to enemy morale as a target might have rapidly disappeared. He served, however, for another ten years and the conjunction of his wartime assessments together with his assumption of responsibility for air control, replacing the Army, meant that the rhetoric of the morale effect of bombing assumed a significant importance in the formulation of Royal Air Force doctrine.

During the early years of peace Trenchard saw few opportunities for expansion, deeming it politically impossible. Ever alert to political nuances he awaited the chance to develop a powerful but independent Royal Air Force. His

aim was to have two strings to his bow. The first, air control or substitution, he had achieved; the second, an independent strategic bombing force, awaited an opportunity. These two aims he saw as complementary developmental policies and his approach was subtle. At least until 1921 no claim was made for the formation of a bomber force but he frequently pointed out that air threats to Britain's security were always possible. If those threats were to be countered, he argued, then a strategic bomber force was essential. His opportunity came in 1922 when French air power was recognised at a time when her relations with Britain were strained. French demands for German reparations and her readiness to occupy the Ruhr were some of the roots of the growing tensions.

It has never been suggested that France entertained aggressive intentions towards Britain at that time but Trenchard's call for Royal Air Force expansion was a reminder of her apparent vulnerability.²³ Fear of the bomber and death from the air were still fresh in many minds. The Government, quick to appreciate the public mood and aware of the country's air defence deficiencies, acted promptly and began a programme to form a Home Defence Air Force (HDAF).

On 1 June 1923 Sir Samuel Hoare, Secretary of State for Air, outlined in a paper for the National and Imperial Defence Committee the plan for an expansion of the Royal Air Force for home defence. The aim, he made clear, was to reach a three to four ratio of front line machines with front-line French aircraft; expansion would be in stages in step with French expansion, and the scheme would provide for regular, territorial and civilian elements. Included in his preamble, however, was a cautionary proviso. "I do not pretend" he admitted,

that the scheme is more than an outline or that the figures that it contains whether it be men or money, are more than rough estimates For the time being I cannot be expected to do more than give my colleagues a general sketch of the main features of a possible expansion.²⁴

The first target was to produce an HDAF totalling fifty-two squadrons of day and night bomber and fighter squadrons. Prime Minister Stanley Baldwin, announcing the plans in the House of Commons later in June, asserted that what was required was a force of sufficient strength adequately to protect the British

people against an air attack by the strongest air force within striking distance of the country.²⁵

The ratio of bomber and fighter squadrons required discussion but eventually, largely because of Trenchard's insistence, it was decided that there would be seventeen fighter and thirty-five bomber squadrons. In making this decision, with deterrence the aim, one of the guiding principles was that "the addition of bombers at the expense of fighters would inflict more damage on the enemy than the absence of the fighters would permit the enemy to inflict on us."²⁶

Trenchard's vision, of course, was of an offensive defence that would either deter aggression or be sufficient to launch an effective destructive bombing campaign. At meetings to decide on the broad lines to be followed in the expansion programme he was quick to reject any suggestions that the actual numbers of fighter or bomber squadrons to be formed was open for discussion. He had determined that the first requirement was to establish the number of bomber squadrons required for offensive operations. Once that number had been agreed, then the remainder would be established as a defensive fighter force. Both Air Commodore T. C. R. Higgins, Director of Training and Staff Duties, and Squadron Leader Charles Portal, then a member of the Directorate of Operations, were given sharp reminders that numbers were not negotiable.²⁷ It appears that lessons that Trenchard should have learned regarding the need for fighter escorts during operations with the Independent Force had either not been learned or had been forgotten. Confirmation that the fighter escort question had been overlooked is provided by a survey of the minutes of several meetings where the main discussion point centred on whether the squadrons were to be employed on day or night operations.

Remarkably, even though the types of aircraft had yet to be decided, the decision reached was that squadrons should be capable of both day and night operations. Where were the voices pointing out that different techniques, different training, and different equipment were all essential requirements depending on whether the attacks were to be in the dark or during the day? Day operations required air gunners if the formations were to provide mutual protection, whereas at night darkness provided the cover. Thus, at night, a greater weight of bombs could be carried. Bomb aiming also differed between day and night operations

because by day aircraft flew higher to avoid anti-aircraft fire and so different abilities and equipment were required for those responsible for bomb aiming.

Many lessons had been learned in night bombing raids late in the First World War. One was that aircraft suitable for bombing by day were not necessarily the best aircraft for night operations. Another was that the training given pilots for formation operations by day did not equip them for night bombing. Unfortunately they were lessons that were frequently overlooked, or worse, ignored. Thus, when Bomber Command was forced to operate at night early in the Second World War, the training deficiencies became very apparent. Also forgotten was that effective night attacks required precise navigation. This had been provided in 1918, on the allied side of the lines, by lighthouses, situated from five to twenty miles apart, flashing in morse a particular identification letter. In order that these lights be seen crews flew at comparatively low levels – around 3,000 feet.²⁸

Another problem, never adequately solved in 1918, was that of target location and identification. Furthermore, the wrong impression was often provided by the degree of opposition the British bombing aircraft encountered. If a target in either French or Belgian territory was considered unimportant, the Germans provided little, if any, opposition. For targets within Germany, the opposition was often so intense that that the defences could not be penetrated. The lesson of air superiority was too often misapplied. Finally, too much weight was given to crew reports following bombing missions. Crews rarely report failure so night bombing often received greater acclaim than the actual results merited.

Despite the numerous and weighty discussions that took place concerning the fifty-two squadron scheme it ended up as a paper plan rather than an air force. The decision that thirteen of the squadrons would be either auxiliary or special reserve squadrons meant that any belief in achieving parity with France either in total, or front-line numbers, was unfounded. Only four aircraft were allotted to the auxiliary squadrons, two trainers and two service machines, and the part-time volunteers manning the squadrons carried out their flying training at weekends and the once yearly fortnight's camp. Two of the three flight special reserve squadrons had only part-time volunteers while the other flight was manned by regulars. They did not equate to a first-line reserve.

The initial intention had been that the expansion would be complete by 1928. A delay was built into the scheme, however, when it was decided, as an experiment to avoid the necessity of establishing additional *ab initio* Flying Training Schools, that all flying training would be carried out on the squadrons. That required students to spend one year flying only training aircraft prior to conversion to Service machines. An approximate completion date for all squadrons to become operational became 1930.²⁹ In December 1925 the completion date was advanced to 1935. Then, in response to Churchill's revision of the "Ten Year Rule" in 1928, the completion date became 1938.

From 1923 to 1933 the fifty-two squadron scheme remained largely unchanged although economic and political disturbances created further unplanned delays. The economic crisis on Wall Street in 1929 had spread to Britain by late 1931 and it brought with it feelings of uncertainty – economically, socially and militarily. British officials, fearing that European and possibly Far East peace was at risk, and aware that an arms race could develop, became leaders in a disarmament movement.

Two factors combined during the early 1930s to severely restrict all efforts at air force expansion. Firstly, Britain's economic ills were naturally reflected in the financial pressures applied by Government to all three Services. Budgets were reduced or remained virtually static between 1931 and 1934. Possony's dictum³⁰ was fully tested. How were the allotted monies best spent to prepare for war against an unknown enemy? Secondly, a dominant feature of life in Western Europe during the 1930s was the development of the fear of the bomber and the threat it posed of a knock-out blow.³¹ Perhaps it was most clearly enunciated by Stanley Baldwin, Lord President of the Council, when in the House of Commons on 10 November 1932 he told Members that everyone must appreciate "that there is no power on earth that can protect him from being bombed . . . the bomber will always get through."³² The fear of the bomber, combined with the belief that it would always get through, made Great Britain a willing participant in the Geneva Disarmament Conferences during 1933 and 1934. With the potential menace of a resurgent and militaristic Germany having been recognised by 1935, the attendance of some politicians at disarmament talks that year was perhaps somewhat less than willing.³³

This concern was emphasised in July 1936 when a deputation from both Houses of Parliament met with the Prime Minister, Stanley Baldwin, Secretary for War, Lord Halifax, and Minister for Coordination of Defence, Sir Thomas Inskip, to express their anxiety about “the European conditions, which seem to us extremely menacing, and about our own position faced with these conditions.”³⁴ Among the twenty-person delegation, Sir Austen Chamberlain, Winston Churchill, Leopold Amery, Brigadier General Sir Henry Page, Admiral Sir Roger Keyes and Lord Trenchard were prominent figures.

The armaments’ truce occasioned by the Geneva Conferences was significantly disadvantageous to Great Britain because her air defences were already weak and the organisation responsible for expansion could easily have been brought to a state of collapse.³⁵ Many hoped but few believed that success would attend the Geneva talks. General Balbo, Italian Air Minister, called the conference “a huge illusion factory.”³⁶ War, he acknowledged, would be neither prevented nor delayed by anything that was done at Geneva. Nothing was done. Discussions on banning either bombing or bomber aircraft and on the status of civil aircraft went around in circles. Germany’s temporary withdrawal on 29 August 1932 because she had been refused equality of rights – parity with France – was of considerable concern. Her final resignation on 14 October 1933 spelled the end of meaningful discussions at Geneva.³⁷

The failed disarmament conferences revealed that although there was cause for concern in the Far East there was even greater cause for worry in Europe. While France demanded security, Germany sought a return to the equality she had enjoyed prior to the Treaty of Versailles. The demands were incompatible. With Hitler’s accession to power on 1 January 1933 German nationalism surged. Germany now replaced France as the theoretical potential enemy, though Great Britain took heart from the belief that rearmament for Germany appeared a long-term proposition.

In 1933 the HDAF comprised forty-two squadrons, including twelve non-regular units. With the possibility that twenty-eight squadrons could be deployed at any moment under the Defence of India requirement (should Russia attack that country), Britain’s defences were precariously placed. There were additional problems. Reserves of pilots, aircraft, engines, transport and general stores were all in short supply.

Germany's withdrawal from both the League of Nations and the Disarmament Conferences in October 1933 heightened tension. On 15 November 1933 the Cabinet, responding to a suggestion from the Committee of Imperial Defence (CID), established the Defence Requirements Committee (DRC). Their task was to identify the deficiencies that existed in Britain's defence arrangements after fifteen years of comparative neglect.³⁸ They reported on 28 February 1934.³⁹ Threats were acknowledged in the Far East and India by the DRC but the most urgent was that posed by a resurgent and militaristic Germany. They recommended that the fifty-two squadron scheme formulated in 1923 be completed, with war reserves, as quickly as possible. Cabinet was asked to consider whether an additional twenty-five squadrons were required. The total cost of rearmament for all three Services over five years was estimated at £71,300,000. The R.A.F. share was £8,800,000.⁴⁰

For a government which hitherto had pursued ruthless economic measures the report gave rise to considerable concern. In an effort to reduce expenditure, the Chancellor of the Exchequer, Neville Chamberlain, suggested that the states of Europe enter into a limited liability partnership guaranteeing each other's security. Politicians welcomed the plan, but the Chiefs of Staff pointed out that while the mutual assistance scheme might work, liability could never be limited. A German attack against Poland was given as an example. For Britain to render air aid to Poland would require that her bombers be based in Poland and it was impossible to accept that Britain would not then become a target for German bombers.⁴¹

With Germany now identified as the potential enemy, the Low Countries became of significant strategic interest to the RAF. Should Germany occupy them then London would not be the only target. Germany would also possess early warning of raids against German targets. Conversely, if the RAF could base her bombers in the Low Countries then German targets in the Ruhr were made accessible and the German early warning system no longer existed. Air Ministry staff, like many others, feared the 'knock-out' blow. It was the worst case scenario. Well aware that an all-out air offensive would involve heavy casualties, the Air Ministry called for a build-up of both pilots and aircraft and warned that essential industries must prepare for expansion. Others also expressed their

concern. Newspapers (the *Daily Mail* in particular) and politicians, with Churchill taking the lead, demanded rapid and extensive rearmament.

On 16 July 1934 Expansion Scheme A was announced by the CAS to prepare the RAF for war in 1942. In that period the HDAF was to increase to seventy-five squadrons plus four flying boat and five army co-operation squadrons. The paper deterrent force was to be augmented. Unfortunately, although seventy-five squadrons was the aim, national economics prevented the provision of reserves. The RAF was to continue to be a 'shop window' force with empty store rooms. It was a dangerous decision. A rider, that the reserve must be provided should war appear imminent, was issued on the false premise that provision of essentials such as personnel, aerodromes and buildings could be accelerated should war threaten. Major expansions in the Services can never be accomplished in the short-term.

In a leading article the *Daily Mail* lamented that the plans announced in the House of Commons by Lord President of the Council, Stanley Baldwin, (serving in Ramsay MacDonald's Second National Government), would

be received with extreme disappointment and anxiety. Face to face with an emergency of the gravest character the Cabinet had been content with half measures, taken in the most dilatory manner. . . . The first duty of every Administration is to place the nation it controls in such a position as to be able to resist external aggression. The National Government is not discharging this duty. Unless it wakes speedily from its condition of inertia, and refuses longer to allow itself to be bemused by schemes for pacts and disarmament conferences, it will bring the Empire down in utter catastrophe.⁴²

Winston Churchill, in the House of Commons, described the proposed increase in air strength as "tiny, timid, tentative, tardy," but he opposed a vote of censure, asserting "that while he disliked the 'apologies and soothing procedures' adopted by the Government, he feared even more the Opposition's refusal to face the facts."⁴³ He warned the House that

By the end of 1935 the German air force will be nearly equal in numbers and efficiency . . . to our home defence air force even if the Government's present proposals are carried out. . . . if Germany continues this expansion and if we continue to carry out our

scheme, then some time in 1936 Germany will be definitely and substantially stronger in the air than Great Britain . . . once they have got that lead we may never be able to overtake them.⁴⁴

Germany, of course, had never fully complied with the requirements of the Treaty of Versailles in respect of her air force. A structure was kept in place and later strengthened when *Deutsche Lufthansa* commenced operations. The new national airline had rapidly become the most efficient in Europe. Its programme of research and development in night and all-weather flying, blind approach systems and long range navigation, was far in advance of anything in the United Kingdom in either commercial or military aviation. Although not readily convertible for military purposes, *Lufthansa* became a military training facility.

In March 1935 Hitler announced the creation of the *Luftwaffe*, the German Air Force. It was a much-delayed birth announcement. Two weeks' later, in an aside to Sir John Simon, Foreign Secretary, Hitler claimed that Germany had achieved parity in numbers with Britain's metropolitan air force. The Cabinet, greatly disturbed, believed that an immediate response was necessary. The Air Staff, already in difficulty with Expansion Scheme A, was much less eager. They believed that Hitler had over-stated German Air Force strength. In any case training facilities then in existence in the RAF would be unable to cope with additional students without lowering standards while industry was already at full stretch.

It is one thing to announce an expansion scheme but it is another for action to be taken. The fifty-two squadron scheme is a typical example. Announced in 1923, it still awaited completion in 1935. Meanwhile the RAF deterrent force remained a short-range, light bomber component. Specifications had been issued for a heavy bomber replacement for the obsolete Virginia and the obsolescent Heyford but the Whitley (Spec B3/34), first flown in 1935, was not due in squadron service until 1937. Specifications had been issued in 1932 – B9/32 from which Wellingtons and Hampdens would arrive and P27/32 for the Fairey Battle – but they were not expected in the air until late in 1935. Light bombers were available, but for a war with Germany they were useless.

The Military Correspondent for *The Times* summed up the situation. We have a high quality air force he observed, but

our bombing force is mainly equipped with machines of small bomb-load and narrow radius of action – about 250 miles. Against attacks launched from beyond this radius the greater part of our counter-offensive forces would not appear to be capable of effective retaliation.⁴⁵

A *Flight* editorial of 11 April 1935 took comfort in the fact that the writer believed that, should it become necessary, the RAF was capable of accelerated expansion. “Air power” he claimed, “depends not so much on the number of existing aircraft as upon the power of rapid expansion in personnel and material.”⁴⁶ The lesson to be hard learned was that rapid expansion in the Services without lowering standards and compromising efficiency is simply impossible.

Expansion Scheme A set the stage for disaster for the RAF. Orders were given for aircraft that would be obsolete when the war came but which would still be in front-line operations.⁴⁷ The Fairey Battle is a case in point. Faireys underwent extensive tooling-up to establish the production line but output was slow. Technical problems concerning engines, wings and bomb carriers all caused delays. Production was expected to reach 220 aircraft in 1937; only eighty were completed. By the time the shadow factory organisation began producing aircraft in 1938 the Battle was already obsolete. Nevertheless, because of the desire to achieve parity, at least in numbers, and the need to provide for future large scale production, Battles continued to flow off the assembly lines. By May 1939 seventeen squadrons were either equipped or in the process of re-equipping with the Fairey Battle. It was symptomatic of a process that has been called “rearmament instability”.⁴⁸

With a further deterioration in the international situation following Italy's invasion of Abyssinia in 1935, and increasingly threatening gestures from Germany, British expansion plans were widened. On 4 May 1935 after Hitler's claim to parity, Scheme A was replaced by Scheme C. The Metropolitan Air Force⁴⁹ was to be increased to 123 squadrons, with 1,500 first-line aircraft, to be completed by 31 March 1937.⁵⁰ The aim was to increase the number of medium and heavy bomber squadrons at the expense of the light, thus confirming Germany as the potential enemy. It was a scheme designed to save money, but was flawed in that it provided an air force without reserves, capable of little more than thirty days' intensive war operations.

On 3 March 1936 the British Government issued another *Statement Relating to Defence*, expressing concern at the rapid rate of German rearmament. The Statement announced that although Scheme C was proceeding, “new developments in design will render it possible to make great advances to the striking power of the Force.”⁵¹ The new programme, Scheme F, was for a target figure of 124 squadrons with 1,750 first-line aircraft exclusive of the Fleet Air Arm. No significant increase in the number of squadrons had been provided for but medium and heavy bomber units were to have their Initial Equipment (IE) raised from twelve to eighteen aircraft. Importantly, and for the first time, Scheme C included reserves.

Scheme H, considered by Cabinet in January 1937, planned to further increase the Metropolitan Air Force to 145 squadrons but was never implemented. There were two reasons. Firstly, assurances were received from German authorities that their air force would have a first-line strength of only 1,620 aircraft by autumn 1938. Secondly, there were production difficulties in the British aircraft industry. The Air Staff disapproved of Scheme H because the increased strength was to be achieved by taking 150 aircraft from the reserves should war break out.

In 1937, with international tension between Britain and her potential enemies showing no signs of abating, the British government had come to realise that the country faced, virtually alone, the triple threat of Germany, Italy and Japan. Isolationist United States, doubtful France, and the enigmatic Soviet Union, together with Belgium’s declaration of neutrality, meant that it was time for an urgent stocktake of available manpower, materiel, and industrial capacity, measured against essential requirements both at home and overseas. Lord Swinton, the Secretary of State for Air, asked the Air Staff to provide details of the force they considered essential in order to deter possible aggression. Uniquely, the perceived needs were not restricted by either political or economic considerations. It was to simply be a listing of the strategical requirements to enable the Royal Air Force to provide a measure of security both at home and abroad.

Scheme J, as it came to be called, was presented on 20 October 1937. It provided for a total of 203 squadrons (including thirty-eight fighter and ninety bomber squadrons for the Metropolitan Air Force) to be completed by 31 March 1941.⁵² The main effort was to be directed at achieving parity in bomber striking

power with the *Luftwaffe*. However, General Milch, Secretary of the German Air Ministry, had visited England in November 1937 and thanks to his boasting about German aircraft production figures, the British authorities abandoned any notion of parity in numbers.

Unfortunately, unless the country was placed on a war footing, Scheme J was not achievable in either industrial capacity or in available manpower. Moreover, by calling for a thirty-eight per cent increase to the budget figure of £467,500,000 already allocated for Scheme F, it over-reached economic realities.⁵³ Sir Thomas Inskip, Minister for Co-ordination of Defence, insisted that the scheme be drastically pruned. His letter calling for reductions in expenditure also contained a series of questions. For example, he asked, how much would be saved if, while the number of fighter squadrons was maintained, bomber squadrons were left with reduced establishments and only brought to full strength after mobilisation?⁵⁴ It was the first movement of the pendulum towards the build up of a defensive fighter force at the expense of an offensive bomber arm.

Naturally, Lord Swinton and the Air Staff objected. They argued that the bomber force had been planned to provide a deterrent equal in strength to the force which it was believed the *Luftwaffe* could employ against England.⁵⁵ Reduction in bomber numbers could only be accepted if Bomber Command were seen to be capable of inflicting more damage on German targets than the *Luftwaffe* could on British targets. Alternatively, reduction was permissible if German targets were more readily accessible for Bomber Command than English targets were for the *Luftwaffe*. As neither situation pertained, Inskip's solution was rejected by Lord Swinton and the Air Staff.

Inskip remained obdurate. He accepted the proposed increase in the number of fighter squadrons but rejected increases for overseas squadrons and only agreed to minimal increases in the number of bomber squadrons. At the same time bomber reserves were severely pruned, which meant that Bomber Command would only become fully efficient after mobilisation. Bomber Command's teeth had been effectively drawn. Inskip's proposals were accepted by the government and the Air Ministry were advised to prepare, with Inskip, a less ambitious and cheaper expansion scheme. Scheme K, with a bomber force of seventy-seven squadrons but with a reserve for only nine weeks, was presented in January 1938. The rejection of Scheme J effectively ended the race for parity; it

also marked a turning point in that air policy, instead of preparing for offensive action in the event of war, was forced to pay most attention to defensive requirements.

In a final attempt to assuage the despondency among the Air Staff at the demise of Scheme J, Inskip claimed that the reduction in bomber production was in order to create "industrial capacity to produce bombers once war had begun."⁵⁶ Nevertheless, it was now becoming clearer to the Air Staff that their reliance upon the ability of Bomber Command to act as a deterrent, or provide effective counter blows, had been severely reduced. In order to avoid defeat, but contrary to established RAF doctrine, security was to be focussed on fighter defence.

A further *Statement Relating to Defence* was issued in March 1938. It announced in general terms that air force training facilities, both air and ground, were to be increased. Furthermore, the number of different types of aircraft employed in the RAF was to be reduced. As a consequence, factories would each produce only one type of aircraft.⁵⁷

Under the influence of the Munich crisis Scheme M was introduced on 25 October 1938. Priority in this scheme was given to the production of fighter aircraft. As far as bombers were concerned, the aim was to have the capability to achieve parity with German striking power. Production of heavy bombers such as the Stirling, Manchester and Halifax, under development since 1936, became the priority. Plans were announced for eighty-five heavy bomber squadrons totalling 1,360 aircraft and fifty fighter squadrons with 800 aircraft.

In all the various expansion schemes most attention was given to aircraft numbers but what must not be overlooked is that during the period 1934 — 1939 enormous changes in aircraft had also taken place. Monoplanes had replaced biplanes and metal had largely replaced wood in their construction. Some of the new aircraft appeared at the last-ever Hendon display in 1937 but few were yet in squadron service. By 1938, at Empire Air Displays, although Blenheims and Battles predominated, Wellingtons and Hampdens also made a showing as part of the bomber forces, while Spitfires and Hurricanes appeared as representatives of Fighter Command.

By 1936 it had also become clear that the Air Defence of Great Britain (ADGB) Command, established in 1923 in face of a perceived threat from French air power, had become unwieldy. Under the ADGB scheme the planned fifty-two

squadrons, bomber and fighter, were placed under a centralised command responsible to the Air Ministry. With bomber squadrons outnumbering the fighter, concentration was thus centred on the bomber element to best display the independent offensive capability of the Royal Air Force. The ADGB scheme had been of significant value because it had confirmed the continued existence of the RAF as a single unified air force under centralised control and equal in status and independence with both the Royal Navy and the Army. Nevertheless, by 1936, with expansion increasing, it was time for change.

The ADGB was thus replaced by four Commands — Bomber, Fighter, Coastal and Training — each independent of the other and directly responsible to the Air Ministry. It was an acknowledgement of the fact that the application of air power required specialists in training, equipment, and command. At root was the desire to ensure that the visualised war requirements would differ little from the practices of peace. Air Marshal Sir John Steel, formerly Commander-in-Chief of the ADGB, was appointed head of Bomber Command, and Air Marshal Sir Hugh Dowding became the first Commander-in-Chief of Fighter Command. One significant benefit was that although the division between offensive and defensive elements of the RAF became more identifiable, neither was totally subservient to the other.

By the winter of 1938/39 Bomber Command was still in a state of transition. The force, predominantly, was flying aircraft deemed if not obsolete, then largely obsolescent. Munich fortunately provided the breathing space. Although the total number of bomber squadrons had reduced from forty-one on 1 October 1938 to thirty-four on 1 August 1939, the heavy bomber squadrons had increased from ten to fourteen with six weeks of reserves.⁵⁸ The steps taken were in the right direction. In September 1939 thirty-eight squadrons were mobilised. First-line bomber strength was one Harrow (to be used on transport duties), ten Battle, ten Blenheim, five Whitley, six Wellington and six Hampden squadrons. Although the Harrow was obsolete, the Battles obsolescent and the Blenheims of doubtful value, Bomber Command went to war.

In 1936 it had been hoped that the first of the truly heavy bombers, to be built to specification B12/36, would have been available by 1939, but military aircraft, built to exacting specifications, can rarely be built to timetables. The prototypes of the Stirling, Manchester and Halifax first flew in May, July and

October 1939 respectively, but the first truly heavy bomber operation was not carried out until the night of 10/11 February 1941 when three Stirlings of No. 7 (Bomber) Squadron bombed oil storage facilities at Rotterdam. Manchesters followed on the night of 24/25 February and Halifaxes on the night of 11/12 March.

Bomber Command went to war in 1939 believing that it possessed the capacity to wage a strategic bombing offensive in daylight with self-defending bomber formations. There were hard lessons to be learned. Very little night flying had been carried out in the leisurely days of peace and navigation problems during day flights were overcome by employing the 'Bradshaw' technique – follow the railway line or descend and read the station name. Navigation, at least until May 1938, had been the responsibility of inadequately trained and largely unwilling pilots. At that time, although an observer may have been doing the navigation, the pilot still retained responsibility. Eventually, at a policy meeting in the Air Ministry on 16 May 1938, it was finally agreed that "the navigation of the aircraft in war should be carried out by a properly trained observer/navigator."⁵⁹ Finally, in this catalogue of deficiencies, no research had been carried out regarding the type or weight of bombs to be employed against particular targets and available air intelligence was totally inadequate.

Other crew members, air gunners and wireless operators, were largely ground tradesmen who received, as we have seen, an extra sixpence a day for undertaking part time aircrew duties.⁶⁰ Bombing was not going to be a problem, so it was believed, because peace-time, day exercises, at medium levels, in known flying areas, had produced reasonable results. Had the night bombing errors sustained during the Sector and Combined Training Exercise in August 1937 been considered, then any notion of attempting night attacks on distant, unknown targets, deep in Germany, would have been totally rejected. In this particular exercise forty-seven attacks were made at night on targets at Enfield, Leytonstone and Kidbrooke, and the bombing errors from 6,000 feet were so great that only one could be measured: it was 1,889 yards. According to Air Vice-Marshal Patrick Playfair, AOC 3 Group, these results were the norm; they simply repeated results obtained in the Air Defence of Great Britain Exercises in June 1935. His forecast was bleak. "The time has now come," he reported,

when the limitations in the efficacy of precision bombing by heavy bomber aircraft at night in war must be squarely faced. Past results have clearly indicated that much has yet to be done before the problems of navigation over unknown and unlighted territory and the identification of strange and unilluminated targets even approach solution. It is for serious consideration whether under present conditions bombing at night will not have to be regarded as in terms of area bombing.⁶¹

Air Chief Marshal Sir Edgar Ludlow-Hewitt, Commander-in-Chief Bomber Command, in his report to the Air Secretary, was equally critical:

Though these results . . . are nothing unusual in this country to date against unlighted targets . . . they are none the less deplorable . . . until, if ever, we can produce equipment suitable for the purpose, we must recognise that precision bombing at night especially with high speed aircraft against unilluminated targets, i.e. in war conditions, remains a matter of very great difficulty.⁶²

In March 1939 Ludlow-Hewitt provided his *Readiness for War Report*. It made equally sombre reading. He admitted that in 1938 Bomber Command had been unprepared for war. He also expressed concern that while some progress had been made "in many essentials we are still far from attaining to a satisfactory standard of war efficiency."⁶³ The major problem identified by Ludlow-Hewitt was the continued expansion. Operational efficiency had been impaired he asserted, because

almost the entire effort of the Command has had to be devoted to the elementary training of new drafts of inexperienced personnel, and to mastering the maintenance and elementary operation of new equipment . . . The results of this are illustrated by the lack of progress made in the programme of investigation of operational problems.⁶⁴

The CAS, Air Chief Marshal Sir Cyril Newall, had always been well aware of the urgent need for expansion. On 8 April 1938, with regard to expansion Scheme L, he reminded the Secretary of State that

unless the Cabinet are prepared to incur . . . the full expenditure required for Scheme L . . . we must accept a position of permanent inferiority to Germany in the air . . . we shall not survive the knock-out blow.⁶⁵

Perhaps, however, despite reminders from Group Captain John Slessor, his Director of Plans, Newall took less cognizance of Bomber Command's lack of preparedness for war than is desirable in a Chief of the Air Staff. Ludlow-Hewitt's deficiencies list in 1939 merely provoked the comment from Newall that "the AOC-in-C was trying to clear himself."⁶⁶ The list demanded action which it did not receive. The implication accepted by Newall was that Ludlow-Hewitt had no intention of going to war with the equipment provided. Newall, however, admitted that he was unsure of the reply that should be made to Ludlow-Hewitt's letter.⁶⁷

The accuracy of Ludlow-Hewitt's judgements was soon to be demonstrated.

Virtually throughout the 1930s, Royal Air Force expansion programmes had been concentrated on building a bomber force capable of mounting a strategic counter-offensive sufficient to either deter or, in the last resort, destroy a potential enemy. Thus, in September 1939, Bomber Command went to war determined to show that strategic air power had a significant role to play in three-dimensional, modern war. Pre-war planning had identified strategic German targets the destruction of which by daylight precision attacks, launched by self-defending bomber formations, would not only reduce the enemy capacity for war making but also lower the morale of the population at large. War time reality provided the harsh learning experience that to persist with the methods for which they had trained and been equipped would early lead to the destruction of the limited bomber forces then available. In order to avoid extinction Bomber Command would have to operate by night, for which its crews were largely untrained and the aircraft both unsuitable and ill-equipped.

The immediate aim, forced upon the Air Staff, was that conservation of the limited resources was essential coupled with an enormous further expansion of aircraft and crews, aerodromes, bombs and flares, improved and modernised training facilities, together with the extensive recruitment and training of ground staff to maintain the aircraft in flying condition. Time was the element most desired by the Air Staff because they were well aware that the specifications laid down in 1936 for a truly heavy bomber force would eventually provide them with the weapon they mistakenly believed they would possess in 1939. Fortunately, time was provided by both Germany's and Britain's unwillingness to be the first to launch bombing attacks where civilians were put at risk. Time, the vital

commodity, was also provided by Britain's ability, backed by her widespread Empire, to stand alone until June 1941 and carry on the attritional warfare so necessary in the defeat of a nation as powerful as Germany. In June 1941 Hitler made his move against Bolshevism and invaded Russia and new vistas were revealed for Britain who had gained another unexpected ally. There were to be many setbacks but progress was inexorable and, providentially, it was time that would prove to have been on the Allies' side.

End Notes

¹ By Armistice Day it included four day and five night bomber squadrons plus an escort fighter squadron, never operationally employed. See H. A. Jones, *The War in the Air*, (Vol. VI., Oxford, 1937,) p.135 ; see also Alan Morris, *First of the Many*, (London, 1968), pp. 172-4.

² Command Paper (Cmd.) 100, *Synopsis of British Air Effort During the War*, (London, 1919), p. 16.

- ³ J. M. Spaight, *The Beginnings of Organised Air Power*, (London, 1927), pp. 276 and 280. These were, of course, total numbers and not the actual numbers available for immediate operational use.
- ⁴ Malcolm Cooper, *The Birth of Independent Air Power*, (London, 1986), p.155. See also Air Publication 125, *A Short History of the Royal Air Force*, (Air Ministry, 1936), p. 422-3.
- ⁵ Cadre squadrons were to be built around a regular commanding officer, regular flight commanders and regular servicing airmen, but largely manned by territorials.
- ⁶ Major-General the Right Hon. Sir Frederick Sykes, *From Many Angles*, (London, 1942), p.265. The *Memorandum* is printed as Appendix VII in the book.
- ⁷ Sykes, p. 267.
- ⁸ Cmd. Paper 467, *Permanent Organization of the Royal Air Force*, (London,1919), para.1.
- ⁹ Ibid.
- ¹⁰ P. R. C. Groves, *Behind the Smoke Screen*, (London, 1934), p.257.
- ¹¹ Peter Silverman, 'The Ten Year Rule', in *Journal of the Royal United Service Institution*, (JRUSI), Vol. 116, No. 671, 1971, p. 42.
- ¹² Some authorities quote 22 March 1932 as the termination date but that was merely the date when the Committee of Imperial Defence (CID) recommended termination. They, however, were an advisory body and lacked executive authority. See Stephen Roskill, 'The Ten Year Rule – the Historical Facts,' in *JRUSI*, Vol. 117, No. 665, March 1972, p.70.
- ¹³ Editorial, 'The First Decisive Air War', *Flight*, 26 February 1920, p. 226 and p. 237. See also Chaz Bowyer, *R.A.F. Operations 1918 - 1939*, (London, 1988), pp. 55 - 62.
- ¹⁴ Editorial by Stanley Spooner in *Flight*, 26 February 1920, p. 226.
- ¹⁵ David E. Omissi, *Air Power and Colonial Control*, (Manchester, 1990), p. 18.
- ¹⁶ Tami Davis Biddle, *Rhetoric and Reality in Air Warfare*, (Princeton, 2002), p. 40.
- ¹⁷ Maurice Baring, *Flying Corps Headquarters 1914 - 1918*, (London, 1968), p. 274.
- ¹⁸ Major-General Sir H. M. Trenchard, 'Long Distance Bombing', in PRO AIR 1/725/97/7, 26 November 1917.
- ¹⁹ 'The Work of the I. A. F.', *Flight*, 9 January 1919, p. 52.
- ²⁰ Ibid.
- ²¹ H. A. Jones, *The War in the Air, Appendices*, p.26.

- ²² George K. Williams, *Bombs and Bombsights*, (Alabama, 1999), p. 247.
- ²³ John Ferris, 'The Theory of a 'French Air Menace,' Anglo-French Relations and the British Home Defence Air Force Programmes of 1921 - 25,' in *Journal of Strategic Studies*, Vol. 10, No. 1, March 1987, p. 67.
- ²⁴ PRO AIR 2/1267, Sir Samuel Hoare, *The Expansion of the Royal Air Force for Home Defence*, 1 June 1923, p. 1, para. 2.
- ²⁵ Keith Middlemas and John Barnes, *Baldwin*, (London, 1969), p. 186.
- ²⁶ PRO AIR 9/69, Folio 43, Anon., 'Note on the proportion of Fighter and Bomber Aircraft in the Home Defence Force', Anon., p. 2, para. 3, 1 November 1927,
- ²⁷ Neville Jones, *The Beginnings of Strategic Air Power*, (London, 1987), p. 29.
- ²⁸ A R Kingsford, *Night Raiders of the Air*, (Chippenham, 1988), p. 101. See also, Squadron Leader G W Murlis Green, 'Fighting in the Air at Night,' in AP 1097, *A Selection of Lectures and Essays from the Work of Officers Attending the Second Course at the Royal Air Force Staff College, 1923-1924*, (London, 1924), p. 56. Also, Humphrey Wynn, *Darkness Shall Cover Me*, (Shrewsbury, 1989).
- ²⁹ PRO AIR 41/39, Squadron Leader R. B. Wernham, *The Pre-War Evolution of Bomber Command 1917-1939*, (Air Ministry, c1948), p.31.
- ³⁰ Stefan T. Possony saw the allocation of funds and decisions as to how that money was spent as fundamental questions. Preparedness, tactics and strategy are all affected by the decisions reached. See Stefan T. Possony, *Strategic Air Power: The Pattern of Dynamic Security*, (Washington, 1949), p. 199.
- ³¹ Uri Bialer, *The Shadow of the Bomber: The Fear of Air Attack and British Politics 1932 - 1939*, (London, 1980).
- ³² H. Montgomery Hyde, *British Air Policy Between the Wars 1918 - 1939*, (London, 1976), p. 284.
- ³³ Arnold J. Toynbee with V. M. Boulter, *Survey of International Affairs 1932*, (London, 1932). See also the same works for the years 1933, 1934 and 1935.
- ³⁴ PRO AIR 9/8, 'Record of a Discussion which took place between the Prime Minister and a Deputation from both Houses of Parliament on July 28, 1936,' p. 1, para. 1.
- ³⁵ Major C. C. Turner, *Britain's Air Peril*, (London, 1933), p. 120.
- ³⁶ *Ibid.*, pp. 127-8.
- ³⁷ Phillip S. Meilinger, 'Clipping the Bomber's Wings: The Geneva Disarmament Conference and the Royal Air Force, 1932-1934', in *War in History*, Vol. 6, No. 3, July 1999, pp. 321 and 325.
- ³⁸ H. Gibbs, *Grand Strategy*, (Vol.1, London, 1976), p. 93.

³⁹ C.I.D., Defence Requirements Sub-Committee, *Report*, (London, 28 February 1934), CAB 24/247

⁴⁰ *Ibid.*, Tables A1 and A2.

⁴¹ PRO AIR 41/39, Wernham, p. 65.

⁴² Leading article, *Daily Mail*, 20 July 1934.

⁴³ Martin Gilbert, *Winston S. Churchill*, (London, 1976), Vol. V, 1922-1939, p. 555.

⁴⁴ *Ibid.*, p. 556.

⁴⁵ *The Times*, 14 March 1935, p.15.

⁴⁶ *Flight*, 11 April 1935, p. 378.

Comment [RC1]:

⁴⁷ Sebastian Ritchie, *Industry and Air Power: The Expansion of British Aircraft Production 1935-1941*, (London, 1997), pp. 58-9.

⁴⁸ Robin Higham, 'Quantity vs. Quality: The Impact of Changing Demand on the British Aircraft Industry, 1900 - 1960', in *Business History Review*, Vol. 42, No. 4, Winter, 1968, p. 446.

⁴⁹ The Metropolitan Air Force included all the home based squadrons administered by the Fighter, Bomber and Coastal Commands. See PRO AIR 41/8, J. M. Spaight, *The Expansion of the Royal Air Force 1934 - 1939*, (London, No Date), p. 35.

⁵⁰ *Ibid.*, p. 45.

⁵¹ Cmd. 5107, *Statement Relating to Defence* (London, 3 March 1936), p.11, para. 37.

⁵² PRO AIR 41/39, p. 204.

⁵³ *Ibid.*, p. 206.

⁵⁴ *Ibid.*

⁵⁵ Hyde, *British Air Policy between the Wars 1918-1939*, p. 408. See also, Spaight, *Expansion of the Royal Air Force*, p. 165. See also, Malcolm Smith, *British Air Strategy between the Wars*, (Oxford, 1984), pp. 176-191.

⁵⁶ G. C. Peden, *British Rearmament and the Treasury 1932-1939*, (Edinburgh, 1979), p. 132.

⁵⁷ Cmd. 5682 *Statement Relating to Defence*, (London, March 1938).

⁵⁸ Spaight, *The Expansion of the Royal Air Force*, p.75.

- ⁵⁹ C. G. Jefford, *Observers and Navigators and Other Non-pilot Aircrew in the RFC, RNAS and R.A.F.*, (Shrewsbury, 2001), p. 132.
- ⁶⁰ Plus two shillings a day while employed on the authorised establishment of a squadron for service in aircraft. See John James, *The Paladins*, (Macdonald, 1990), p.261.
- ⁶¹ PRO AIR 9/64, 'Sector Training Report, 1937,' AOC No. 3 (Bomber) Group to HQ, Bomber Command, 1 September 1937, pp. 2 and 3, para. 16.
- ⁶² PRO AIR 9/64, 'Sector and Combined Training Report,' Ludlow-Hewitt to Air Secretary, 25 October 1937, p. 4, para. 15, underlining in the original.
- ⁶³ PRO AIR 14/298, 'Readiness for War Report,' E. R. Ludlow-Hewitt to Air Ministry, 10 March 1939, p. 2, para. 2.
- ⁶⁴ *Ibid.*, para. 3.
- ⁶⁵ Sir John Slessor, *The Central Blue*, (London, 1956), p.152.
- ⁶⁶ Malcolm Smith, *British Air Strategy Between the Wars*, p. 277.
- ⁶⁷ *Ibid.*

Chapter Two

The Learning Process

During the 1930s the British public had become fearfully aware that the threats posed by aerial bombardment meant that the geographical defences previously provided by their island home were no longer relevant. Wars in Spain and China had shown that urban centres, densely inhabited, had become the target and the public fears generated were not only widespread but also profoundly felt. The bomber, with its ability to reduce the distance between the civilian backwater and the scene of military operations, was now identified as posing a threat to both civilian and serviceman alike. Hospitals were prepared to receive a vast influx of casualties within the first few hours of a war. After Prime Minister Neville Chamberlain's announcement of the declaration of war on 3 September 1939, therefore, many in Britain fearfully awaited the long-promised 'knock-out' blow by *Luftwaffe* formations. Air raid sirens did sound on that day, but the intruder was eventually identified as a French aircraft en route to Croydon that had either omitted to file a flight plan or whose details had not been forwarded to the appropriate defence authorities.

By September 1939, despite a succession of expansion programmes and a vast increase in expenditure on the RAF, the only air force capable of delivering a knock out blow was the *Luftwaffe*. Bomber Command was neither equipped nor prepared to wage a long range strategic air offensive. Its war preparations had been hurried and were far from complete, but the Air Staff believed that time was on their side and that the bomber force under construction would ultimately bring victory. Their first priority was thus to avoid any action that would cause Germany to launch an attempted knock- out blow.

Specific planning for a bombing war with Germany had its origins in the first rearmament discussions as early as 1933. Nothing concrete could be determined at that time because no general war plan had yet been defined. The 'worst case' scenario at that early planning stage was the German occupation of the Low Countries and the heightened threat thus posed for Britain. In order to counter such a possibility it was decided that Britain's bomber force needed to be capable of reducing that threat by an air offensive launched against German airfields,

communications and supplies. On 1 October 1937 Western Air (WA) Plans were drawn up for the Air Staff under thirteen headings – later extended and modified. These were forwarded to Bomber Command on 13 December 1937 with the instruction that detailed planning was to commence on just three, on the premise that war would commence on 1 October 1938. The three were WA 1, WA 4 and WA 5.

WA 1 was a plan for the attack on the German Air Striking Force and its supporting maintenance organisation. Aircraft factories were not initially included. WA 4 involved preparing for attacks on German military communications including rail, roads and canals, while WA 5 involved a possible attack on German war industry, including oil, particularly that based in the Ruhr, Rhineland and the Saar.¹ The Air Staff exhibited no great enthusiasm for either WA 1 or WA 4 because target systems were too varied and widespread and the position of many potential military airfields was very likely to remain unknown.

Only WA 5 appeared to offer prospects for a successful air offensive. For the first time Bomber Command examined potential target systems which, if they could be totally destroyed, would, it was believed, cripple the German war machine. The first targets selected were power and coking plants in the Ruhr. The Ruhr, however, was a densely populated area and attacks directed at these targets would have meant that German civilians would be placed at risk. At the beginning of the war British, French and German authorities, in response to an appeal from President Roosevelt on 1 September 1939, had agreed that a 'gloves off' bombing policy would not be implemented. The so-called 'rules of war' (nominated but unratified in the Hague Draft Rules of 1923) were not to be infringed. Bomber Command was thus at war but the only possible target, for which little planning had been completed, was the German navy. Its vessels could be attacked at sea but when in harbours, only where no threat would be posed to German civilians.

It was to be a war where the German forces set the pace, with Britain merely following and trying to react to German pressures as best it could. This situation prevailed for almost two years. The German Scandinavian venture, their assault in the west, the Battle of Britain and the night offensive that followed, invasion preparations, and the successes of German U-boats, all called for different responses from Bomber Command. It was always on the defensive and

in no position to attempt offensives that had been so much discussed during preparations for war. Actualities had overcome theory. Offensive actions were always tentative and amounted to little more than trials. They were always on such a small scale that neither significant material nor morale damage should ever have been expected. Optimistic aircrews, however, painted a glowing picture of bombing successes.

Although this chapter will only deal with events prior to Air Chief Marshal Harris's arrival as AOC-in-C Bomber Command, it would be useful here to describe the intricate target selection process that evolved as the war progressed. A wide selection of agencies was employed with varying degrees of influence. Questions of policy were first discussed at high level by the Air Staff and then, after consideration by the Chiefs of Staff, referred to the War Cabinet. Overall, of course, was the Prime Minister Winston Churchill (who was also Minister of Defence) with his assumed power of veto. This process provided opportunities for other departments of government to have an input into target selection and, perhaps, applied an extra, unwelcome pressure on the Air Staff. The final responsibility for target selection to comply with the bombing policy rested with the Targets Committee. It was first established in the Directorate of Plans in the Air Ministry, but was later moved to the Directorate of Bomber Operations where the meetings were chaired by the Director — firstly Air Commodore John Baker, then from March 1943 by Air Commodore Sydney Bufton. Representatives from the Ministry of Economic Warfare (MEW), War Office, and the Admiralty, were also part of the Targets Committee.

The MEW as an independent body under the control of a Cabinet Minister was first established on 4 March 1938. It was an extension of the intelligence gathering agency, the Industrial Intelligence Committee, formed in 1929. In order that air action against economic targets was most effectively employed, it had been agreed that it was essential that it was closely related to other forms of economic warfare such as blockade. The MEW was charged with keeping

a close watch on the enemy's supply position, and, acting on its information as to the distribution of enemy industry, centres of storage and sources of supply, and as to the key points of his transport system, will be responsible for advising the Air Ministry as to the selection of suitable economic targets.²

Perhaps the agency with the greatest influence on both target selection and bombing policy was the Objectives Department of the MEW. As the war progressed, however, it became increasingly noticeable that the views expressed by the Objectives Department were frequently opposed by the Intelligence Department. These differences were exemplified in the winter of 1943/44 when, with the MEW pressing for attacks on the German ball bearing industry, the Assistant Chief of Air Staff (Intelligence), Air Vice-Marshal Inglis, was calling for a series of attacks on Berlin.

Another agency with considerable influence in target selection was Research and Experiments 8 (RE 8), a branch of the Ministry of Home Security. First established to measure the success of the bomber offensive against German industry by means of photographic interpretation, it had been initially set up outside Air Ministry jurisdiction but its responsibilities had multiplied. Because no pre-war research had been completed on the effect of different types and weights of bombs on various structures, and there was now considerable evidence available in Britain following the German *Blitz* of 1940-41, RE 8 was called upon to advise on the possible effects to be obtained from a bombing offensive against German cities. RE 8's responsibilities included the assessment of the relative values of incendiary versus high explosive bombs in creating destruction, the effects that could be expected on particular building structures from the wide range of weapons available to Bomber Command, and to suggest ways in which German fire and rescue organisations could be inhibited by the bombing tactics and weapons employed. Increasingly, RE 8 had to call upon the MEW for economic intelligence and, early in 1944, it was placed directly under the control of the Directorate of Bomber Operations.

Occupying a place above these agencies was the Joint Intelligence Sub-Committee (JIC), an advisory body to the Chiefs of Staff Committee. The JIC was made up of the intelligence heads of the three Services and the MEW. Its function was to advise the Chiefs of Staff, on a united basis, of their solution to the problems referred to them for consideration.³

Targeting, of course, was a perennial anxiety throughout the war. Basically, it was a matter of too many targets and too few resources, with European weather all too often the arbiter. In the selection of the target the problem required the

balancing of three elements: the definition of the strategic intention or the tactical requirement; the necessity of accurate economic intelligence; and finally, whether the nominated force possessed the operational ability, numbers, weapons, and equipment, for the delegated task.

Bomber Command's activities during the war were controlled by means of Bombing Directives. Their purpose was to provide the priority order in which the Air Staff wished particular targets or target systems to be attacked. They were issued to the AOC Bomber Command firstly over the signature of the Director of Plans and later that normally of a Deputy Chief of the Air Staff, both on behalf of the Chief of the Air Staff. Amplifications or modifications to the general directive were normally provided either by follow-up signals or letters. Although executive orders, these Bombing Directives were rarely precise and all too often appeared more as statements of general policy. The vague wording was often to become a source of friction at the highest level. When implementing these instructions the AOC Bomber Command had authority to interpret them as best he was able in the prevailing weather and tactical situation.

The effective distribution of Directives took a long time to organise. As late as November 1941 concern was being expressed in the Directorate of Bomber Operations that the content of these Directives often remained unknown to both Station Commanders and crews detailed to carry out the operations who remained unaware of the official war plan current at that time. The necessity for secrecy was noted but it was felt that if the bombing policy were to be effectively carried out then at least aircraft captains and their navigators should be given greater details. Nor was it only the rank and file who operated in ignorance. The poor distribution went even further. In November 1941, Air Vice-Marshal Slessor, Air Officer Commanding 5 Group since 12 May of that year, informed Group Captain Ellwood, Deputy Director of Bomber Operations, that he remained unaware of the contents of the Transportation Directive issued to Bomber Command on 9 July 1941. He also informed Ellwood that he had yet to see a paper, written on 29 September, relating to the value of incendiary attacks on area targets.⁴

Situations changed rapidly in 1940, and in that year Bomber Command received no fewer than twelve Directives, some only six days apart. Even so, one pattern that can be recognised in these Directives is that the Air Ministry early identified one target which they believed would bring the German war machine to

a halt if it could be destroyed. That target was oil. It was the first priority target in four of the Directives in 1940 and mentioned in most of the others; it disappeared early in 1941 but reappeared much later in the offensive. Oil was a weak link in the German economy in 1940, despite the large quantities captured in France, but Bomber Command lacked the ability to reduce German supply. By 1941, with increasing importations from Romania together with expanded synthetic production, immediate German oil problems had eased. Bomber Command's attack on oil in 1940 and 1941 thus had virtually no effect on German war capacity and only amounted to annoying pinpricks.

In selecting oil as the primary target in 1940, Bomber Command made two major miscalculations. Firstly, it lacked the capability to inflict significant damage at night on small precision targets. The second error, closely related to the first, was that it had been assumed that average night bombing errors in moonlight would be 300 yards, the same as the average day. During pre-war night bombing practices crews used well lit targets in known and familiar areas and flights were conducted at low or medium levels and only in good weather. On 30 November 1938, shortly after the Munich crisis, planning officers met to consider certain tactical assumptions necessary in the production of achievable bombing plans. The accepted average error for high level bombing by day was 300 yards. Presumably this had been the average determined from many observed and measured practices carried out by day on bombing ranges in the United Kingdom.

At this same meeting it was further agreed that a standard average error for night bombing, although required, could not be ascertained. The problem was that peace-time regulations had prohibited practice bombing of unlit targets at night and there were consequently no figures available to determine average night bombing errors. Nevertheless, after the outbreak of war but prior to the launching of the first bombing offensive, without the introduction of any new bombing device or further fresh evidence, 300 yards was accepted as a credible figure for average night bombing errors in moonlight conditions. This, of course, was a surprising, critical, but mistaken decision. Had a larger average night bombing error been accepted then it would have become clear that Bomber Command lacked the capability, certainly to the end of 1941, to apply the weight of attack necessary to destroy small precision targets such as oil facilities.⁵

The formulation of well thought-out doctrines and planned strategies is an essential requirement for military campaigns. Yet both are nothing unless the means to implement them exist. A gross error was made in selecting 300 yards as the average error for night bombing operations in moonlight. Another, equally gross, was a failure to appreciate that bomber crews in the Royal Air Force in 1940 and 1941, inadequately equipped, were incapable of navigating their aircraft at night, in bad weather and under wartime conditions to a blacked-out target somewhere deep in Germany. The navigational failures revealed early in the war were the direct result of twenty years of neglect by what had been a pilot oriented air force. It was a lesson that should have been learned earlier. One glaring example of the lack of navigational ability had been revealed during training for King George V's Royal Review held on 6 July 1935. The Royal Air Force was inspected at Mildenhall, Suffolk, in the morning and then the Royal party drove to Duxford, Cambridgeshire, for the fly-past in the afternoon. During practices for the fly past it had been revealed that some bomber crews could not accurately navigate the twenty-five miles that separated the two military aerodromes. To assist crews to make the journey safely and accurately, smudge fires were lit at intervals on the route. Unfortunately, farmers were burning off crops at that time of the year and their fires caused confusion. A light beacon was then installed at Duxford and the fly-past proceeded according to plan.

Navigation, at least until 1937, had been the responsibility of pilots. The importance of accurate navigation had long been appreciated but little had been done either to train navigators or to provide the tools and the appropriate space for that crew member to successfully carry out his task. Few long-range night navigation exercises were ever carried out and thus, when Bomber Command was forced into the night role, it was, with regard to navigation experience and ability, seriously deficient. Some thought had been given to actual bombing at night but very little as to how the aircraft could be brought to the target area and nothing as to how the actual target would then be located and identified.

Bomber aircraft in 1939 were equipped with direct reading compasses, thermometers, altimeters and airspeed indicators as aids to navigation. The crew member responsible for the aircraft's navigation was provided with maps and charts, sextant and sight reduction tables, together with wireless frequencies to obtain bearings from known and identified transmitting stations. The sextant and

sight reduction tables were very little used because few had experience of using a sextant in the air and even fewer had the ability to use the tables to obtain a position line from the sextant measurement. Confidence in the use of astronomical observations is only achieved through frequent and regular practice. But with the weather frequently experienced over Europe, especially when flying at low or medium altitudes, there are few opportunities to sight the stars to obtain altitude readings and thus gain confidence. Cloud, for bomber navigators, was an almost permanent problem. There was also the problem that obtaining a useful sextant reading required the aircraft to be flown accurately and steadily for one or two minutes while the sighting was taken. Under war conditions few crews enjoyed that experience.

As for the accuracy of wireless bearings, that was limited by possible night effect or coastal refraction and corrections to readings were not able to be assessed. Enemy interference, successfully carried out by British scientists against German radio beams, so-called 'meaconing,' was another worrying possibility.

Observers, as the navigators were called early in the war, were thus left relying on 'dead reckoning' (DR). This required keeping a record by employment of vectors of the headings flown for the particular period of time at the calculated true airspeed or airspeeds. With frequent turns being made, the airspeed rising and falling, and variations of altitude plus possible compass inaccuracies, the plot was not likely to be very accurate. Indeed, given the best of conditions and the best and most accurate of pilots and navigators, the expected errors of DR navigation were thirty nautical miles per hour flown. Then, if the crew were able to identify a pinpoint, by joining the air position (the position the aircraft would have been in still air conditions) to the identified and plotted pinpoint, a wind velocity could be determined for the period that the airplot had been running. Errors in the found wind meant that there would be errors in bombing. If no pinpoints were obtainable due to weather, crews flew on DR and then in the final instant bombed on their estimated time of arrival (ETA). Inaccurate navigation always meant poor bombing results. Bombing on ETA was an extreme last resort.

At the outbreak of war the Air Officer Commanding-in-Chief Bomber Command, Air Chief Marshal Sir Edgar Ludlow-Hewitt, was well aware of the deficiencies of his Command. He had available for operations twenty-five

squadrons totalling 352 aircraft and not even this small number had fully operationally trained crews.⁶ His aircraft not only lacked effective armament but also bombing and navigational equipment, so his Command was in no position to launch the all-out bombing offensive on which war doctrine had been based. Such an offensive risked heavy losses – losses which he knew his Command could ill-sustain.

His awareness of the limited navigational skills possessed by his crews caused Ludlow-Hewitt, even at that early stage, to consider the possibility of night training flights over Germany dropping propaganda leaflets. He was also aware that Bomber Command had a large number of medium bombers in the force and he believed that their best employment would be in an Army support role when ground operations finally began. In seeking some action for his force perhaps he was simply trying to avoid the Clausewitzian concept of unemployed forces being “quite neutralized.”⁷ Nonetheless his assessments were realistic and clear-sighted. Conservation, of necessity, became his watchword.

Ludlow-Hewitt, knowledgeable and fearless in presenting the situation as he saw it, made no attempt to keep the poor state of Bomber Command from his superiors in the Air Ministry. His Annual Report on Bomber Command in 1937⁸ and Readiness for War Report in 1939⁹ were both couched in terms that brooked no misunderstanding. Bomber Command, he admitted, was operationally inefficient and in no position to launch offensive air operations. Considerations of independent air power and knock-out blows should have been swept aside by his revelations but the CAS, Sir Cyril Newall, received the reports with some scepticism. The faults, he chose to believe, lay with the messenger and not with Bomber Command.

In 1938 Ludlow-Hewitt, well aware of Bomber Command's deficiencies, had rejected WA 1, the Air Staff's plan for the attack on the German Air Striking Force and its maintenance organisation, and targets in the German aircraft industry. He deemed the defensive plan “wasteful and ineffective.” Somewhat incongruously, however, regarding WA 5, the plan for the attack on the industrial Ruhr, he declared that he was “much impressed with the high importance of this plan as a practicable operation.”¹⁰ He selected forty-five power plants for attack as being a feasible war operation, estimating that their destruction could be accomplished in one month, using 300 aircraft flying 3,000 sorties, with the possible loss of 176

aircraft.¹¹ Such a campaign would have been an all or nothing venture. Either German industry would have been crippled or Bomber Command would have been annihilated.

But Ludlow-Hewitt was more than the messenger: he was one of the few in possession of the facts. At least one of his Group commanders was also worried. Late in August 1939, Air Vice-Marshal Arthur Coningham, AOC 4 Group, in a letter to Air Commodore Norman Bottomley, SASO Bomber Command, also expressed his concern. His letter was not one that would have inspired confidence. His Group, he cautioned, could only provide "60 trained aircrew and 70 serviceable aircraft."¹²

The long-held belief that Bomber Command could operate successfully by day, employing self-defending formations, was quickly shattered. Attacks by Bristol Blenheims on German naval units at Wilhelmshaven on 4 September 1939 showed that German anti-aircraft fire was not to be underestimated. Five Blenheims were shot down. On 14 December 1939 the loss of six Wellingtons, from a formation of twelve on reconnaissance, was a warning that bomber formations were unable to provide effective defences against fast, heavily armed, German fighter aircraft. Finally, only four days later, 9 Squadron, based at Honington and only officially operational on Wellingtons since June 1939, sent nine aircraft in a formation of twenty-two on a reconnaissance of Wilhelmshaven. The formation was intercepted by single and twin-engined German fighters and ten Wellingtons were shot down including five from 9 Squadron. A total of fifty-nine aircrew were killed and five became prisoners of war.¹³ German *Freya* radar was more sophisticated (although lacking a height-finding facility) than the British authorities had appreciated. The Wellingtons had been detected at sixty miles range so the Bf109s and 110s had no trouble carrying out an interception.

It was clearly time for a change of tactics. Confidence in the self-defending ability of bomber formations, though seriously eroded, was not completely discarded, but restrictions were placed on day operations. The lesson was that fighters with superior speed and greater fire power were, at this time, more than a match for British bombers by day, and particularly those unfortunate enough to still not be equipped with self-sealing petrol tanks. Some blame was laid by Ludlow-Hewitt on the crews for poor formation flying but by January 1940 he was advising

Air Staff that any alternative plans held for attacks on Ruhr targets were in urgent need of reassessment.¹⁴

But by 1940 other views held by Ludlow-Hewitt's had also changed. He now fully appreciated the limitations of his bomber forces. Firstly, his Blenheims and Battles lacked the range to bomb the Ruhr from England without over-flying the Low Countries. Secondly, daylight attacks on Ruhr targets by his heavy bombers (Wellingtons, Whitleys and Hampdens) were ruled out because they required significant penetration of German territory. All that remained for offensive operations were night attacks at high level by inexperienced crews in aircraft which were still only equipped with the course-setting bombsight developed at the end of the First World War. Conservation thus became the guiding principle and bombing of German targets, it was agreed, would have to be done at night, despite Bomber Command's lack of preparedness and dearth of navigational aids.

Faute de mieux, on the night of 19/20 March 1940 the first trial night bombing attack was carried out on a German seaplane base at Hornum on the island of Sylt. In moonlight conditions fifty aircraft took part and a significant number of crews claimed to have attacked the assigned target. They reported that the target had been readily visible and that fires were created in hangars and barrack accommodation. Although photographic evidence obtained on 6 April showed no signs of damage to the base, this was simply taken to mean that either the damage had been repaired or was at least hidden from prying aerial cameras. Such ill-advised optimism boded well for the assumed success of a night bombing offensive. Unfortunately, it also provided misleading support for Air Vice-Marshal Coningham's contention, expressed in February 1940, that the "accuracy of night bombing will differ little from daylight bombing."¹⁵ Not until eighteen months later was the inaccuracy of night bombing finally revealed by the Butt Report.

On 1 April 1940 Air Chief Marshal Portal (about to replace Ludlow-Hewitt as Air Officer Commanding-in-Chief, Bomber Command) received a new Directive from Air Commodore Slessor. As a consequence of the German invasion of Scandinavia, air plans were reviewed. Two situations were considered. Firstly, should the Germans not invade the Low Countries but authority be given for unrestricted air warfare to commence and, secondly, should Germany invade Belgium and Holland. In the first case, WA 8, the plan to attempt to dislocate German industry by means of night attacks, was to be launched. Oil targets were

the first priority followed by electricity plants and self illuminating targets. In the second situation, a German invasion of Holland and Belgium, vital German targets, particularly in the Ruhr, were to be attacked. The aim was to disrupt troop concentrations, interfere with communications in the Ruhr, and destroy oil targets. Portal was advised that a sustained operation might be required but neither plan was to be put into effect without an executive order from the Air Ministry.¹⁶

During the overrunning of Norway, possible targets for the heavy bombers of Bomber Command were restricted to German aerodromes and shipping on supply routes to Norway as far north as Narvik. The major problems were weather and the lack of range of the bombers employed and little of consequence was achieved. It was fortunate that a tight rein had been kept on the bomber forces since the debacle of December 1939, because on 10 May 1940 Germany began her major campaign in the West.

Although the Air Staff believed that considerable value, from a strategic point of view, would be obtained from an assault on industrial targets in the Ruhr, they had long been thwarted. French opposition was aroused by the fears of German retaliation and their belief that all bomber forces should be held in reserve to be committed for Army support as and when required. Nor had War Cabinet approval been obtained for attacks which created danger for German civilians. On 23 April 1940 France had reluctantly agreed that, should Germany invade the Low Countries, targets in the Ruhr could be attacked, particularly oil plants and railway marshalling yards but the War Cabinet remained inflexible. Thus the Air Staff plan to seize the initiative was forestalled. Instead, for almost one week after Germany's *Blitzkrieg* began in the west on 10 May 1940 the heavy and medium bombers of Bomber Command were employed in Army support requirements attempting to isolate the battlefield by cutting communications (road and rail) to the battle areas.

Tactical strikes were the first priority for Bomber Command during the battle for France and every effort to establish a strategic bombing programme was thwarted by immediate operational requirements. Bomber Command suffered grievous losses during the disasters in France, with the medium squadrons operating Blenheims and Battles being particularly hard hit. The loss of experienced crews was a severe blow to any plans for expansion of the

Command, since such crews would have been employed as instructors in the new Operational Training Units (OTUs) about to be established.

After the fall of France the greatest threat facing the British Isles was that of a German invasion. It was yet another diversion. A new Directive was issued to Bomber Command listing targets in their order of priority. The *Luftwaffe* appeared to offer the greatest threat so the German aircraft industry was to be the primary target. It was followed by communications, minelaying, oil targets and, finally, crops and forests. The invasion was to be countered by having the entire bomber force, prepared at short notice, to attack any invading force preparatory to embarkation, at sea, or at the point of attempted landing.

What was the result for Bomber Command of the frequent diversions? It was that one of the basic principles of war was never applied: that of concentration. One definition is "Concentration is application of purpose and energy towards achievement of a single aim. The maximum effort, moral, physical and material, must be concentrated at the critical time and place."¹⁷ Bomber Command, at least in the first two years of war, rarely achieved this concentration. In fact the force was so small that the concentration required to achieve destruction was beyond its capacity. Apparently this fact was not appreciated by the Air Staff, so that the Directive issued on 13 July 1940 was doomed to failure from the outset. This latest Directive called for a greater weight of attack to be applied to a smaller number of targets to obtain the hitherto unobtainable concentration. It was replaced eleven days later.

In 1940 and 1941 bomber tactics were largely determined by individual squadron commanders. Forms Bravo were teletyped by Bomber Command Headquarters to squadrons detailed for operations, listing numbers of aircraft required, target and alternatives together with bomb loads. The time on target, altitude to fly, route to follow, and take-off times, were all at the discretion of either the squadron commander or even individual crews. Forward looking squadron commanders, Wing Commander Bufton of No. 10 (Bomber) Squadron for one, attempted to devise tactics to improve bombing performance. He selected his best crew or crews to lead the squadron, with instructions that when the target had been located and identified, Verrey lights were to be fired, or additional flares released, in an effort to attract following crews to the target area. It was an embryonic form of path finding. Later, the refined Path Finder Force plan which

Buften and staff prepared, believing it was essential for improving Bomber Command's performance, would bring him and his Directorate into direct conflict with the AOC-in-C, Bomber Command, Harris.

Buften early realised that the illuminating flares available to Bomber Command were totally inefficient. They operated after falling a set distance below the aircraft and were not shielded. Thus, if that distance was 4,000 feet, then a flare released at 12,000 feet would ignite at 8,000 feet. Had the release height been 5,000 feet ignition would have occurred at 1,000 feet. What was required was a barometrically operated flare operating at the required height above the ground. It was also essential that flares be hooded to prevent significant ground haze and smog (as in the Ruhr) reflecting flare illumination upward rather than revealing potential ground targets. It was just another of the many problems calling for urgent attention.

The problems of navigation were also early recognised by Buften and until they were solved he realised precision bombing was impossible. He well appreciated the futility of nominating an individual building in a large city as the target when he knew that many crews could not even find the city. Buften therefore accepted that in the interim, area bombing offered the only prospects for limited success. Later, when serving as the Deputy Director of Bomber Operations, with Gee entering general service use in March 1942, he held high hopes that ultimately Bomber Command would possibly be able to begin precision attacks on specific targets. Again, it was going to be a long struggle because, even with the additional employment of Oboe and H2S, Harris was reluctant to accept that his force was capable of precision bombing.

Portal well understood the difficulties created by the new Directive issued on 13 July 1940, and he prepared a detailed criticism. Firstly, he reminded the Air Staff that even in moonlight many of the listed targets would not be located by even average crews. In addition, many of the targets were so isolated that near misses would create no residual damage. Portal had for some time been a supporter of the calls for an area bombing programme. His submission was rejected by the Air Staff because they still laboured under the misapprehension that large objectives would be readily identified in moonlight. Residual damage, they conceded, had not been considered. Material damage was the aim.¹⁸ Did they believe that all bombs released found the target?

On the first anniversary of the outbreak of war Churchill issued a memorandum to the War Cabinet giving his views on the war situation. "The Navy can lose us the war" he warned,

but only the Air Force can win it. Therefore our supreme effort must be to obtain overwhelming mastery in the Air. The Fighters are our salvation, but the Bombers alone provide the means of victory. We must . . . pulverise the entire industry and scientific structure on which the war effort and economic life of the enemy depends.¹⁹

Political pressure was growing, probably under the influence of public opinion, for Bomber Command to make retaliatory attacks on German towns and cities as a response to German raids on London and other cities. Churchill made the suggestion directly to Portal. He was advised, in response, that British bombing was successful, and was more effective than the German, because the bombs were aimed at specific targets the destruction of which was reducing German war-making capacity. It was the Air Staff's belief that widespread, sporadic attacks, were producing material damage and even some reduction of enemy morale. Harsh lessons would soon be learned.

By October 1940 some experience had been gained by Bomber Command of the limitations of the strategic bombing offensive. Weather had been a major problem, icing particularly so, for aircraft, instruments and even the crews themselves. Aircraft were inefficiently heated so while a crew member near the hot air outflow perspired the others froze. Weather also severely complicated matters for the observers because cloud often prevented pinpoints from being obtained and, in the target area, frequently obscured the aiming point. Target identification was made difficult and unforecast wind changes further complicated the observers' tasks. Weather also caused problems for returning bombers, with fog the primary cause of many crashes. Early in the war, although bomber bases may have been equipped with primitive instrument approach systems, crews were too often expected to operate in conditions beyond their capabilities and experience.

The second winter of war was also notable for the lack of expansion in the bomber force. There were several reasons. One was a lack of aircrew. Many crews with hard-won experience were taken off operations to staff the OTUs being

established as part of the expansion and training programmes. There was also a failure of the ferry pilot organisation. Bomber crews were called upon to ferry their own aircraft replacements. With some factories and servicing units being based in Ireland or northern Scotland this meant that crews could be absent as long as a fortnight should weather intervene. The failure to expand was also a consequence of the continual demands from the Middle East for bomber reinforcements. Between 31 August 1940 and the end of February 1941 3 Group transferred ninety-six Wellingtons and crews to the Middle East.²⁰

Early in October 1940 Portal became CAS and his place at Bomber Command Headquarters was taken by Air Marshal Sir Richard Peirse. The first Directive Peirse received, on 30 October 1940, called for the resumption of attacks on German oil targets. But there was a double aim in that attacks were to be concentrated in an effort to create both material and morale damage. This Directive marked the beginning of the area bombing campaign.

Diversions for Bomber Command were never far away, however, and in November 1940 one was the threats posed by heavy enemy warships being prepared in French harbours, and by the *Admiral Scheer* roaming free in the North Atlantic. Another, in December, was the increasing threat posed by German U-boats operating in the Western Approaches. The critical struggle in the Atlantic was to require the attention of Bomber Command on many occasions during the period from December 1940 to May 1941 and later. It would also involve much wasted effort on attacks directed at concrete-protected U-boat bases on the Atlantic seaboard in occupied France.

In January 1941 Peirse was advised by the Vice Chief of Air Staff, Air Chief Marshal Sir Wilfrid Freeman, that Germany's oil position was expected to become critical by Spring of 1941 provided the scale of attacks could be maintained. From then on, unless the scale of attacks was increased, Germany's oil position was expected to improve. Any disruption to Romanian supplies would be a bonus but the destruction of the German synthetic oil plants, it was argued, would be sufficient to bring about a crisis. Should weather conditions prevent attacks on the seventeen oil installations identified, then Bomber Command was to continue the offensive by attacking industrial towns and communications, particularly those connected with the oil industry.²¹

Many attacks were carried out against oil targets in the first twenty months of war and pilots reported fires, explosions, and falling chimneys, all indicative of massive destruction. To support these claims analysts in England had little direct evidence. There were meagre intelligence reports from Germany, possibly exaggerated, but very few reconnaissance photographs. Oil samples, taken from German aircraft shot down over England, were also analysed in an effort to determine if the Germans were being forced to use synthetic products. Comparisons were also made with similar German attacks on British oil installations as one way of determining results. Although intelligence gathered directly from enemy sources via Signal Intelligence (Sigint) in 1940 and 1941 provided valuable tactical information concerning the German Air Force's deployment, strength, and order of battle, there was little of strategic importance for either target planning or raid damage assessment. The *Luftwaffe* used wireless telegraphy (W/T) sparingly at this time so there was little Enigma traffic to intercept.²²

An even more fallible assessment was estimating the possible results from the total weight of bombs released in relation to the size and type of target. D. A. C. Dewdney, recruited by Bomber Command to act as oil adviser, provided his first report in September 1940. He was one who, lacking photographs, favoured assessing results from the weight of bombs released. At this stage he evinced little trust in what the camera may have shown. It was his opinion that "However little damage appears in a photograph, an objective must have suffered damage in proportion to the weight of bombs dropped over it."²³

Dewdney's hypothesis was rudely rebutted on 24 December 1940, when a reconnaissance aircraft returned with good photographs of the two oil plants at Gelsenkirchen.²⁴ These targets had been frequently and supposedly heavily bombed and pilot reports indicated that severe damage had been inflicted. The photographs, however, showed that both plants were working and that they appeared undamaged. This discovery sent shock waves not only through the Air Ministry but also to higher levels – the Chiefs of Staff and War Cabinet. The oil plan had, in fact, suffered a serious and long-lasting set back. The perception that night precision bombing was impossible with the equipment then available was slowly being realised. Bomber Command was not the rapier that so many had believed it to be. It was rather a bludgeon. This being so, more power was

required to deliver the blows than had previously been necessary for sharp rapier thrusts.

In March 1941 Churchill intervened. The Battle of the Atlantic had reached a critical stage and he ruled that for the next four months the bombing offensive had to be directed against U-boats and long-range aircraft. Priority was to be given to those targets in Germany situated in congested areas so that the greatest morale effect could also be obtained.²⁵ Although this campaign was aimed at easing problems in the Battle of the Atlantic, when weather intervened an increasing number of area attacks were carried out against German towns including Berlin. General areas rather than specific points became the target.

On 9 July 1941 the requirements were spelled again out for Bomber Command. Their new Directive defined the weak points in the German political, economic and military situation as being the morale of the civil population and their inland transportation system. Before this campaign was fully underway, urged by Lord Cherwell,²⁶ D. M. B. Butt from the War Cabinet Secretariat undertook a study of 600 night bombing photographs taken in June and July 1941. His report to Bomber Command on 18 August 1941 was a devastating blow. Only one in five of the bombers sent on an operation was ever within five miles of the target, while of those claiming to have attacked the target, only one in three got within five miles.²⁷ The expression 'within five miles' of course means somewhere within an area of 75 square miles surrounding the target. It must also be noted that these were average figures. Against difficult targets, in bad weather conditions, in the industrial haze in the Ruhr, or when there was no moon, the figures for aircraft within five miles of the target could fall as low as one in fifteen.

It was a very bitter pill to swallow, and Peirse's reaction confirms human reluctance to accept information which undermines long-held beliefs. He commented: "I don't think at this rate we could have hoped to produce the damage which is known to have been achieved."²⁸ The AOC 4 Group, Air Vice-Marshal Carr, responded similarly, noting that because an aircraft failed to produce a photograph it did not necessarily mean that the target had not been attacked.²⁹

With bombing cameras yielding such valuable information, why had the truth been hidden for so long? Firstly, their value had been under-estimated and calls for them to be installed had been ignored. There was also a degree of aircrew resistance, some regarding them as checks on their ability. The belief that

failure to obtain an aiming point photograph might mean that the operation would not count towards their operational tour was also a vast disincentive for crews detailed to fly with fitted cameras.³⁰ Finally, camera production was slow. On 13 January 1941 the establishment for night cameras was four per squadron. With forty-two squadrons in the first-line that required 168 cameras: only twenty-two were available. Supplies had improved fractionally by 25 April 1941 when 165 night cameras were on issue, fifteen belonging to OTUs. The establishment, however, had now increased to 693 cameras.

One factor which seriously delayed the fitting of cameras in bomber aircraft was that neither the Air Ministry nor Bomber Command itself could reach final agreement on the main object of night photography. The argument centred on whether it was to provide damage evidence, or simply to record the aircraft's position at the time of bomb release. In 1942 a camera to determine target damage was still under development but the simplified version, already in production, was available to meet the latter requirement. On 31 August 1941, thanks no doubt to the Butt Report, Bomber Command agreed to accept all the simplified cameras that could be provided.³¹ But it was not until 19 September 1941 that Bomber Command spelled out to all Group Commanders that cameras were installed to confirm the bomber's position at bomb release time, to pinpoint fires, and provide general information. Staff were reminded that cameras were not installed for raid damage assessment purposes.³²

The Butt Report finally convinced Portal, as CAS, that the bludgeon would have to be employed. To that end he set two wheels in motion. To assist those responsible for navigation, he called for a speed up in the research and development of improved navigational aids. Some were in the pipeline but development had been slow. Late in September 1941 he prepared a paper for Churchill calling for Bomber Command to receive a greater proportion of the national war effort and aim for a force of 4,000 bombers. With such a number he claimed that "decisive results against German morale" could be achieved after a six months' offensive.³³

Churchill, apparently wearing his anti-air force hat (which he donned and doffed frequently during the war), responded brusquely. He reminded Portal that Bomber Command had promised much but had achieved little. The bombing effects, he protested, "both physical and moral, are greatly exaggerated The

most we can say is that it will be a heavy and, I trust, a seriously increasing annoyance.”³⁴

This sharp response, written on 27 September 1941, illustrates Churchill’s contradictory relations with the Royal Air Force, for on 7 September 1941 he had written to the Lord President of the Council, Sir John Anderson, expressing his concern at the slow-down in heavy and medium bomber production. The ultimate aim was 4,000 medium and heavy bombers. This force required the construction of 22,000 aircraft between July 1941 and July 1943 with 5,000 expected from American sources. The expected shortfall in British production was 5,500. “If we are to win the war’ he cautioned, ‘we cannot accept this position.”³⁵ Anderson was given a fortnight to provide a preliminary proposal and advised that Churchill would be watching over the progress of the scheme.

As the third winter of the war approached, concern was growing at the increasing number of bomber losses. In August 1941 525 aircraft were struck off charge, only 225 of which were battle casualties.³⁶ Crew inexperience, improvement in the German defences and severe weather conditions were exacting a heavy toll. In the same month, British bomber production was only 331. Planned expansion was becoming contraction. Tentative efforts were made to try to achieve greater concentration during raids in the hope that the defences would be overwhelmed but crew inexperience meant that concentration was rarely achieved.

On the night of 7/8 November 1941 Peirse launched 400 bombers against targets in Berlin, Mannheim, Cologne and Essen. It was a difficult night and thirty-seven failed to return. Weather was the main problem, with extensive icing, compounded by crew inexperience, causing many aircraft to run short of fuel. Peirse’s initial explanation to Portal was that the meteorologists had failed to warn him of the hazardous weather conditions which his largely inexperienced crews had encountered that night thus, it was simply the fortune of war. Churchill, on learning of the heavy losses, and apparently angered by what he viewed “as a false emphasis on air policy” minuted Portal and Sinclair on 11 November:

I have several times in Cabinet deprecated forcing the night bombing of Germany without due regard to weather conditions. There is no point at this particular time in bombing Berlin. The losses sustained last week were more grievous. We cannot afford

losses on that scale in view of the short fall of the American bomber programme . . . there is no need to fight the weather and the enemy at the same time.³⁷

Portal, no doubt disturbed by both Churchill's minute and the heavy losses experienced, had Bottomley issue a new Directive to Peirse on 13 November emphasising the need to conserve the bomber forces with the view to resuming heavy attacks in the spring of 1942. This Directive was, in effect, an admission that the bombing programme that Bomber Command had been following was being made at too high a cost. As Webster and Frankland made clear:

At one time 1941 had been looked to as the year in which bomber Command would become a weapon of war-winning power. Now the hope was transferred to 1943, and in the meantime it had been rudely frustrated and the Government's confidence in strategic bombing had been seriously undermined.³⁸

Peirse was also reminded that his limited bomber forces were not to be exposed to hazardous weather conditions. At the same time Portal also began enquiring into meteorological briefing provided for Peirse on which he launched the attacks on the night of 7/8 November. By 23 November he had been made aware that thunderstorms, hail and icing had all been forecast, contrary to Peirse's report, and that 5 Group (under Slessor) had in fact been allowed to withdraw its aircraft from the long-range Berlin attack, because of the forecast weather, and had been sent instead to Cologne and suffered no losses.

Peirse's revised report, issued on 2 December, repeated his claim regarding what he considered to have been an inadequate weather forecast and also lamented the inexperience of his bomber crews. Freeman, the VCAS, denounced Peirse's revised report and, rather unfairly, blamed him for the inexperience of his crews calling it a "damning admission."³⁹ All the reports were in Churchill's hands by 4 January 1942 so Peirse's days as AOC-in-C, Bomber Command, were numbered. An AOC, having been associated with failure, whether or not it was his fault, is rarely permitted to benefit from the policy changes made as a result of the original failure. On 8 January 1942 Peirse was posted as Commander-in-Chief of the allied air forces in the American, British, Dutch and Australian Command.

The year 1941 had been a momentous one for Britain, Churchill, and the armed forces. Defeats had been suffered in Greece and Crete and the battle in North Africa had ebbed and flowed. In the Atlantic, the U-boats continued their ravages, while in the air war Bomber Command had been found wanting. As a counter-weight, Germany was now heavily engaged in Russia with the winter approaching, and Japan had brought the United States into the war with her attack on Pearl Harbour on 7 December 1941. This latter event had two profound effects for Britain. There were now Pacific concerns to consider and it also meant that the supplies of aircraft expected from American factories would cease as that country attempted to fulfil its own shortages.

But it was not all doom and gloom. A navigational aid, Gee, was about to appear; the possibilities of incendiary attacks were to be investigated; training facilities were to be extended; bombers were to become one-pilot aircraft, thereby reducing training commitments; heavy bombers were now appearing in larger numbers, and the new year promised improved weather. On 14 February 1942 a new Directive was issued in which conservation measures were modified and Bomber Command was told that it could now operate without restriction until further notice. Their target was clearly and unambiguously defined in the new Directive as the "morale of the enemy civil population and in particular, of the industrial workers."⁴⁰ To further this goal, concentrated incendiary attacks were suggested. When the Directive was received Air Marshal John Baldwin was standing in as AOC-in-C, Bomber Command, but one week later he was replaced by Air Chief Marshal Sir Arthur Harris. The change in personnel was to prove as momentous as that in bombing policy.

End Notes

¹ Webster and Frankland, Vol. I, p. 94.

² Ibid., p.261.

³ In addition to the above agencies there were also those concerned with oil targeting but a description of those organisations, together with the Combined Strategic Target Committee formed in October 1944, will be left until Chapter Eight when their relevance will become more apparent and where they will be discussed in detail.

⁴ Bufton Papers, Churchill College, Cambridge, 3/14, Ellwood to Baker, 13 November 1941, paras. 2 and 9. (Hereafter Bufton Papers, file identification and date).

⁵ Noble Frankland, *The Planning of the Bomber Offensive and its Contribution to German Collapse*, (Air Ministry, 1951), p. 35.

⁶ PRO AIR 41/40, Squadron Leader E B. Panter, *The R.A.F. in the Bomber Offensive against Germany, Restricted Bombing September 1939 - May 1941*, Vol. 2, (Air Ministry, 1948), p.5

⁷ Carl von Clausewitz, *On War*, (Ware, 1997), p. 187.

⁸ PRO AIR 2/2961, 19 March 1938.

⁹ PRO AIR 14/298, 10 March 1939.

- ¹⁰ R Cargill Hall, *Case Studies in Strategic Bombardment*, (Washington, 1998), p. 66.
- ¹¹ Jones, *The Beginnings of Strategic Air Power*, p. 131.
- ¹² PRO AIR 14/111, Coningham to Bottomley, 31 August 1939, para. 4.
- ¹³ W. R. Chorley, *Bomber Command Losses of the Second World War 1939 - 1940*, (Earl Shilton, 1992), pp. 25-7. See also T. Mason, *9 Squadron*, (Lincoln, 1965), p.44.
- ¹⁴ Webster and Frankland, Vol. 1, p. 201.
- ¹⁵ *Ibid.*, p. 212.
- ¹⁶ *Ibid.*, pp.109/10.
- ¹⁷ Wing Commander E. L Howard-Williams, 'The Principles of War and the R.A.F., Concentration', *Royal Air Force Quarterly*, Vol. 4, October 1933, No. 4, p. 354.
- ¹⁸ PRO AIR 41/40, Panter, p. 116.
- ¹⁹ *Ibid.*, p. 118.
- ²⁰ *Ibid.*, p.146.
- ²¹ Bufton Papers, 3/47, Freeman to Peirse, 15 January 1941.
- ²² F. H. Hinsley *et al*, *British Intelligence in the Second World War*, Vol. 2, (London, 1981), pp. 235-6.
- ²³ Webster and Frankland, Vol. I, p. 223.
- ²⁴ The Photograph Reconnaissance Flight, equipped with Spitfires, was only established on 16 November 1940, despite calls going back to 1937. See WF, Vol. 1, p.221.
- ²⁵ Bufton Papers, 3/47, Freeman to Peirse, 9 March 1941.
- ²⁶ Formerly Professor F. A. Lindemann, Churchill's scientific and statistical advisor.
- ²⁷ Webster and Frankland, Vol. IV, pp. 205-213. See also Thomas Wilson, *Churchill and the Prof*, (London, 1995), p. 66. Wilson, mistakenly it would appear, gives a figure of one in three of those claiming to have attacked being within three miles of the target.
- ²⁸ Webster and Frankland, Vol. I, p. 179.
- ²⁹ *Ibid.*
- ³⁰ On 4 August 1942 Harris wrote to his Group Commanders saying that photographic proof may be a requirement for crews to have sorties counted as part of their operational tour. He concluded, 'Failing such proof the sorties would not count against the operational tour.' PRO AIR 14/3548. Underlining in the original.

³¹ Webster and Frankland, Vol. I, pp. 250-1.

³² Ibid., p. 251.

³³ Richards, *Portal of Hungerford*, p. 189.

³⁴ Martin Gilbert, *Finest Hour Winston S Churchill 1939-1941*, (London, 1983), p. 1205.

³⁵ Winston S. Churchill, *The Second World War The Grand Alliance*, Vol. 3, (London, 1950), p.450.

³⁶ PRO AIR 41/41, Squadron Leader F. C. Roberts, *The R.A.F. in the Bombing Offensive against Germany 1939-1945*, (Air Ministry, 1949), Vol. 3), p. 31. See also Chorley, Vol. 2, pp. 106 - 133.

³⁷ Martin Gilbert, *Finest Hour*, pp. 1231-2.

³⁸ Webster and Frankland, Vol. I, p. 187.

³⁹ Ibid., p. 256.

⁴⁰ Bufton Papers, 3/47, Bottomley to Baldwin, p. 2, para. 5, 14 February 1942.

Chapter Three

Incendiaries versus High Explosive Bombs

Air Vice-Marshal Harris took up his position as AOC-in-C, Bomber Command in February 1942 having spent the earlier war years in a variety of appointments. At the outbreak of war he was on sick leave in England, without either a job or a settled home, as he had recently been repatriated from Palestine, on medical grounds, suffering from a duodenal ulcer. Knowing that Portal, an old friend, was then serving as Air Member for Personnel, and employing the 'old boy' network, Harris let it be known that he was seeking a position in Bomber Command. On 11 September 1939 he was appointed AOC, No 5 Group Bomber Command, equipped with the inadequate, twin-engined Handley Page Hampden. As a disciple of Trenchard, Harris undertook his duties with largely preconceived notions as to the best employment of the bomber force. However, the gloves were not yet off in the bomber war and Harris's Hampdens were largely employed in the pioneering of aerial mine laying.

When Harris assumed command of No. 5 Group on 14 September 1939 neither his Group nor Bomber Command as a whole was in any position to fight an aggressive war. He was also aware that in many respects his crews were largely untrained for most of the tasks they were being ordered to undertake. Thus, despite the shortage of supposedly qualified crews, he was prepared to take squadrons off operations in order to complete specialised training. The attack on the Dortmund-Ems canal on the night of 12/13 August 1940 provides a good example. Crews for this attack by Nos. 49 and 83 Squadrons were taken off operations in order to practice attacks on similar canals in Lincolnshire. Later, when AOC-in-C Bomber Command, it was No. 5 Group to whom Harris turned when seeking resources to be applied to difficult and dangerous tasks. The Möhne Dam raid on 16/17 May 1943 is one example for in this instance, No. 617 Squadron, newly formed in late March 1943, was given seven weeks' preparation time. Incongruously, the Path Finder Force was given neither training time, nor specially trained crews, when it was established in August 1942. It appeared on Battle Orders the day of its formation although weather did cause a cancellation.

Harris was also well aware in September 1939 that the navigation equipment with which his Hampden aircraft were equipped was woefully inadequate. Thus, in November 1940 in a letter to Bottomley, he urged that a navigator-operated direction finding loop be installed. He even suggested that German beacons could be used to obtain position lines! Radio compasses, of course, are notoriously unreliable at night and are dramatically susceptible to enemy interference but Harris appears to have been unaware of their limitations and potential dangers. In the same letter he was equally sarcastic concerning the progress that was being made with regard to Gee. "I note" he complained,

that the GEE equipment is to have 'an estimated range of 350 miles.' This would be fine for Hinds and Harts when we get it, and we must remember to keep some Hinds and Harts to fit it into. The whole business leaves me in a state of complete despair.¹

As Probert admits, what Harris

was not appreciating were the changes now being made possible by rapidly advancing technology, a technology with which he was unfamiliar. He would learn soon enough the advantages of GEE and the subsequent radar aids to navigators, but his initial reaction to its development indicated a degree of mindset that would continue to hinder some of his relations with the scientists.²

In November 1940 Harris was posted to the Air Staff as DCAS responsible to Portal for concerns relating to Air Force operations — a broad area of responsibility. He did not enjoy his stay in the Air Ministry but neither did many with whom he came in contact. From the first he indicated in no uncertain terms that he was not only wary of those purporting to provide advice but also questioned their motives and ability. R V Jones and the German *Knickerbein* bombing beams, together with the MEW, were early and unwarranted targets. Nevertheless his belief in the war winning capability of the bomber was growing.

Harris's move to the United States of America as Head of the RAF Delegation to that country in May 1941 was surely remarkable, bearing in mind that it required both tact and diplomacy. He had rarely provided evidence that he possessed either. Determined, yes, but throughout his Service career he had shown that opposition was not to be circumvented but rather swept aside,

trampled underfoot, or ignored. His term in the USA, as the CAS's representative on the British Joint Staff Mission, was not entirely successful as, even to the Americans, he appeared domineering and possessed of an unwarranted superiority complex. During his stay in America, which ended shortly after that country was thrust into the Second World War in December 1941, Harris met many important military figures including Generals George Marshall, 'Hap' Arnold and Ira Eaker. Only time would tell if his often piercing frankness had offended his future close allies.

The first on-going controversy between the Air Staff and the AOC-in-C Bomber Command in February 1942, centred on aircraft bomb loads. Both Group Captain Bufton and his superior, Air Commodore Baker, the Director of Bomber Operations, had been convinced by experts in the field that incendiary bombs (IB) were greater destructive agents than high explosive bombs. Comparative photographs of English and German towns attacked by similar numbers of bombers had shown significantly greater damage in English towns than in German. The difference in bomb loads was that the *Luftwaffe* aircraft carried a higher proportion of incendiaries than the RAF. Incendiarism was thus identified as the destructive agent.

Two additional lessons were learned; either the RAF attacks had been too light to saturate the enemy fire-fighting services, or, the attacks were insufficiently concentrated. Although pre-war bombing policy had focussed on the destruction of military objectives, the Directive Harris inherited in February 1942 made clear that because the attack was to be employed primarily against the morale of the industrial workers, a list of selected area targets was provided. It fitted well with the lessons that Harris had learned while AOC No 5 Group more than a year earlier. The Directive also called for concentrated incendiary attacks but Harris, firm in his belief that it would be necessary to kill a lot of Germans before the war was won, was wedded to the notion that high explosive bombs provided the answer. It was to be a marriage that the Air Staff would find difficult to dissolve.

Incendiary bombs had been employed by the Germans in the First World War for attacks on London. Zeppelins, in four raids in 1915, created only one large fire although more than seventy per cent of the bombs released were incendiaries. Gothas, in 1917, with bomb loads half incendiaries and half high explosives, also reported little evidence of large fires resulting from their attacks.

British reports of large fires were taken by German authorities as an attempt to delude them into believing that incendiaries were useful, destructive weapons. Their use by the Germans was thus discontinued, although experiments continued in the hope that the incendiary could be developed into a viable, destructive weapon.³ Unfortunately, during the inter-war years, the belief that the incendiary bomb was an unsatisfactory weapon also persisted with the British authorities. In 1936 a committee was established in the United Kingdom to test the effectiveness of incendiaries when employed against oil storage tanks. One trial was held — in April 1939 — confirming what the authorities already accepted: incendiaries were inefficient weapons.

With day bombing early ruled out as an option in the Second World War, Bomber Command was forced into a night role. But hopes continued to be held that bombing accuracy would be maintained despite the changed conditions. Peirse was urged to follow the instructions contained in the Directive dated 30 October 1940. The first bombers in a raid were to carry mainly incendiaries to light fires in or near the target so that following aircraft would have an identified aiming point.⁴ It was the bombing tactic employed by the *Luftwaffe* for attacks on British targets during their *Blitz* earlier the same year. On the night of 16/17 December 1940 Mannheim was the target. War Cabinet approval had been given on 13 December for this attack, which was to aim at the centre of the city to create maximum damage. Leading aircraft for this attack were flown by experienced crews with maximum incendiary loads designed to create an aiming point for the others. Enthusiastic crew reports painted a picture of a successful attack. Yet photographic evidence, obtained on 21 December, showed that the attack had been widely dispersed and that most of the fires were outside the target area.

Peirse blamed the instructions given to crews to bomb fires, claiming they were too rigid. Crews, he stressed, should have been instructed to first positively identify the target and not simply bomb fires. He was supported by both Bottomley and Air Vice-Marshal Coningham, AOC 4 Group. Coningham, by subscribing to the notion of selected crews leading the attack, had taken a first step in the direction of some form of a target finding force. It was to be a long journey, but the acknowledgement that navigation was inadequate was a vital preliminary.

The Butt Report of 18 August 1941 revealed the true state of the air offensive as far as Bomber Command was concerned. Crews were not hitting

their targets. A comparative study was then made of the destruction created in German towns with that created in British towns by raids of similar strength. British high explosives were believed to be as effective as the German but photographic evidence showed that German bombing apparently created greater damage. The major difference was in the *Luftwaffe* bomb loads: their average incendiary load was thirty per cent, rising at times to sixty per cent while Bomber Command's incendiary loads only varied between fifteen and thirty per cent. Nonetheless, Air Chief Marshal Sir Wilfrid Freeman, Vice-Chief of the Air Staff, suggested that damage variations were the result of German fire fighting organisations being better organised than British.⁵

A comprehensive report was then prepared by Air Staff on the value of incendiary weapons in attacks on area targets. It was suggested that rather than considering incendiary loads as percentages of bomb loads, the concern should be the total number carried. The conclusion reached by this paper was that, in order to swamp the German fire fighting organisations, 25,000 to 30,000 four pound incendiary bombs should be considered the minimum load for the incendiary force. Concentration was to be aimed for in both space and time. The main attack, carrying high explosive bombs, should use the principal main fire sources as aiming points. To achieve maximum material and morale effects, attacks should be repeated on three or four successive nights. The Air Staff attached a reminder that, as stocks of incendiaries were in short supply, the main incendiary weight should be delivered on the first night attack.⁶

Wing Commander Morley, B.Ops. 1 in the Directorate of Bomber Operations, also prepared a paper on the use of incendiary weapons.⁷ He pointed out that the tactic being employed of dropping incendiaries throughout a raid meant that they were dispersed in both place and time and thus could be effectively dealt with by the German fire fighting organisations. A limiting factor was that only the Stirling could carry a load of incendiaries equal to that carried by German Heinkels and Junkers. But the Stirling was still only available in limited numbers. The bomb bay configuration of the Wellington, for example, meant it could carry only twenty per cent of the incendiary load carried by German aircraft.

A trial of Morley's suggested incendiary technique was attempted on the night of 12/13 October 1941. Nuremberg was the target. The raid was not a success. Moreover, Ellwood, the Deputy Director of Bomber Operations, observed

that implementation of the incendiary plan had, at best, been luke-warm. Despite the employment of sixteen heavy bombers, only half the required number of incendiaries were dropped: the seven Stirlings carried no incendiaries and the nine Halifaxes had loads averaging only just over one hundred incendiaries per aircraft. Ellwood suggested to Baker that it was high time for Portal to issue firm orders to Peirse for a full incendiary trial to be carried out on an easy to find town, in good weather, in the next moon period. Maximum incendiary loads were to be carried and the force was to be led by the best navigators in Bomber Command. According to Ellwood, Air Ministry instructions to Peirse were being largely ignored both as to spirit and letter.⁸

In a ten-page memorandum, Dewdney,⁹ Portal's oil adviser, also supported the contention that incendiary weapons were more destructive than high explosives. Incendiary bombs, he pointed out, "are worth at least five times as much as H.E. per ton of Bomb lift, and probably more."¹⁰ As a deterrent, he suggested that explosive incendiaries be incorporated in bomb loads to reduce the efficiency of the German fire-fighting crews.

On 25 October 1941 Bottomley wrote to Peirse outlining a new plan of attack employing incendiary weapons. Code-named *Unison*, the plan was preparation for the time when it was accepted that the full weight of the area offensive would be directed against enemy morale. The attack was to be launched in the best moon period and when weather forecasts gave indications of good conditions both en route and in the target area. The selected target was to be within reasonable range and acknowledged as being easy to find and identify. A fire-raising party of at least fourteen Stirlings and twenty-five Halifaxes and Manchesters would lead the attack to release a minimum of 30,000 incendiaries within a space of twenty minutes. The first wave of the main force, at least 300 medium bombers, was planned to arrive on target forty-five minutes after the fire-raising party. Main force aircraft were to carry mixed loads of incendiaries and General Purpose (GP) bombs and the attack was to be maintained for as long as practicable.¹¹

The weaknesses in the *Unison* plan were those that had plagued Bomber Command since the beginning of the war. Good weather was required, target location and identification were essential, and success hinged largely on the ability of crews to navigate precisely and arrive on target at specified times.

Unfortunately, previous experience had shown that without additional navigational aids, success was certainly not guaranteed. Concern was again expressed, this time in the Directorate of Bomber Operations, at possible shortages of the four pound incendiary bomb because magnesium was only available in limited amounts.¹²

Despite the potential problems, an Operational Instruction was issued by Bomber Command Headquarters to all Groups on 10 November 1941 providing an outline plan for the creation of maximum damage by fire to an unspecified town in Germany. The aim was to saturate the enemy fire services in the shortest possible time and raise a fire of “such size and intensity that it cannot be simulated by decoys.”¹³ Three days later, on 13 November 1941, with no trial of the *Unison* plan having been attempted, the policy of conservation of the bomber force was implemented. *Unison* was shelved, but not completely forgotten — certainly not by the enthusiasts in the Directorate of Bomber Operations

During the winter months, staff in the Directorate of Bomber Operations continued their research into the effectiveness of the incendiary bomb as a destructive agent. In late November and early December Morley made an extensive tour of the bomber groups to spread the incendiary bomb gospel among the group commanders and aircrew, visiting twenty squadrons and four group commanders. His talks focused on the effects of enemy raids on England and the incendiary plan to be launched against Germany. He reported that both individually and collectively the crews were enthusiastic, not only at the incendiary plan, but also that someone had seen fit to provide them with a somewhat fuller picture

At the conclusion of Morley’s lecture, discussions were held and crews were encouraged to offer suggestions. These mainly centred on the need for improved flares in greater quantities to assist in target location and identification. There was also a call from the majority of squadron commanders for the formation of specialist fire-raising squadrons crewed by skilled and experienced pilots and navigators. In concluding his report, Morley noted that morale among the crews appeared to be on the decline. This he attributed to the frequent failure to locate the briefed target even in good weather. Casualties, with no noticeable improvement in bombing results, also appeared to be of concern.

A copy of Morley's report was sent to each of the four group commanders he had visited, identifying perceived deficiencies. Unless action was taken, he pointed out, further reductions in crew morale would follow and the effectiveness of Bomber Command would be reduced. Air Vice-Marshal Slessor of 5 Group and Air Vice-Marshal Baldwin of 3 Group both rejected the call for specialist squadrons.¹⁴ Any further reduction in experienced personnel, they argued, could have fatal consequences. The question of fire-raising attacks was largely ignored. No response from either 1 or 4 Group Commanders has been found.

Buften, who replaced Ellwood as Deputy Director of Bomber Operations in November 1941, was also keenly interested in the incendiary debate. His concerns were that targets were not being located and, even when they were, they were not being accurately bombed. Aircraft continued to operate individually and squadrons were devising their own tactics. These methods, even when successful, were on such a small scale that little evidence was forthcoming that Bomber Command was developing into an effective, destructive force. Citing his own experience when commanding No. 10 (Bomber) Squadron, Buften called for increased use to be made of flares to assist target location and identification. In a paper entitled *Suggestion for Increasing Efficiency of Night Attack*, he argued that combining the flare and fire-raising techniques might well provide results equalling those achieved in daylight conditions.¹⁵

On 14 February 1942 the conservation requirement for Bomber Command was lifted. The Directive to Baldwin, standing in as AOC Bomber Command pending the arrival of Air Chief Marshal Harris, defined the primary target for Bomber Command as "the morale of the enemy civil population and in particular, of the industrial workers."¹⁶ The Directive claimed that the weather would provide the best opportunity for concentrated incendiary attacks and the Russians would be heartened by the resumed air offensive. It was also believed that the combination of the renewed air offensive together with Russian successes would further lower German morale.

With winter weather still prevalent it would appear, at first sight, that this was not the best time to resume the bomber offensive. The deciding factor was the impending introduction of TR 1335 (or Gee, as it came to be called), and its possible employment as both a navigational aid and a target finding and blind bombing device.¹⁷ At 15,000 feet Gee had a range of about 350 miles and could

be used by any number of aircraft accurately by both night and day. It was expected to have an operational life of six months before enemy jamming began and it is clear that much was expected of this, the first significant aid provided for Bomber Command crews. It indeed became a very useful navigational tool but it did not fulfil the hopes of those who had seen it as both a navigation and bombing aid.

On 22 February 1942 Harris took over the reins of Bomber Command. His first brush was with Lord Cherwell, who had written to Portal supporting the fire-raising proposition. Many ideas had been proposed, Cherwell indicated, but there had been very little practical experimentation. He also suggested that consideration should be given to making one particular bomber group responsible for target location and identification. With a man like Slessor in charge, he believed, much might be achieved.¹⁸ Portal agreed with Cherwell and forwarded his letter to Harris.¹⁹

Harris's somewhat sharp reply to Portal gave every indication that he had not taken command in order to learn. After an apology for disagreeing, he claimed that the practice contemplated had been in use when he commanded 5 Group in 1939/40 and he had assumed that the other groups did the same. However, he continued,

The proposal to allot the fire-raising tasks and leadership of raids generally to one particular Group would not work in practice because, by no practical means that I can foresee, could any one particular Group be composed entirely of superior crews.²⁰

The transfer of skilled crews from other groups, he pointed out, would create morale problems among the remainder. His conclusion gives every indication that he had never seen the Butt Report. Our attacks on the oil industry in 1939/40, as far as the weight of attack allowed, Harris asserted in a letter to Portal, were a "great success."²¹ His claim was allowed to pass unchallenged by the CAS but few in authority were still making that same assertion in 1942.

The Director of Bomber Operations, Baker, needed no second urging to take up the cudgels. He reminded Harris that in a meeting on 6 December 1941, when the latter was DCAS, it had been agreed that incendiaries would be used extensively in future operations. Baker assured Harris that provided attacks were

concentrated in time, weight, and space, sufficient to overcome the defences, they would prove to be very effective against any German town or city. He called for a full scale trial to confirm the theories advanced by Morley.²²

Although Bufton's name had not been mentioned in Baker's letter he became embroiled *in absentia*. Harris, in his reply, admitted that he was

a little at a loss to understand where you and Bufton imagine that I do not see eye to eye with you. I am full out to employ the incendiary technique, but not as yet the 100% incendiary technique . . . we must not forget the enormous moral effect of high explosive. We are . . . only in progress of our fourth GEE effort, and we are still trying to perfect our methods. Whether perfection will take the form of a greater or lesser proportion of incendiaries remains to be seen . . . I am still not amenable to be weaned entirely from H.E. . . . I propose to run the whole gamut in experimentation, and we shall see what we shall see.²³

Bufton's suggestion of increased flare usage provided in his paper of 5 November 1941, related to means of improving night attacks, was given a trial on the night of 3/4 March 1942 when the Renault works at Billancourt, west of Paris, was attacked by 223 aircraft from a force of 235. With an almost full moon, helpful weather, no cloud below 10,000 feet, slight ground haze and weak defences, great damage was created. The higher than usual number of crews claiming to have attacked their briefed target is indicative of the good weather experienced and the comparatively short range nature of the target. Lorry production was brought to a standstill for a month. This raid was successful but special conditions had prevailed. They would rarely be provided on long penetration attacks deep in Germany, or targets located in the Ruhr valley.

Then, on the night of 28/29 March 1942, in the first major trial of the *Unison* incendiary technique, Lübeck, a former Hanseatic city on the Baltic, was attacked. Although Gee did not provide coverage all the way to the target, Lübeck was not a difficult target to find because of its near coastal siting. Additionally, the weather was fine, the moon almost full, and it was known to be only lightly defended. Its selection, Harris acknowledged later, was because it had been "built more like a fire-lighter than a human habitation."²⁴ The bombers, 234 in total, attacked in three waves, many from very low levels, and with great accuracy. Photographic

reconnaissance, two weeks later, showed enormous fire damage. The key, of course, was concentration.

But in spite of the success of the raid on Lübeck, staff in the Directorate of Bomber Operations were not convinced that Harris had fully accepted that incendiaries were more destructive than high explosive bombs. They appreciated that Lübeck had been a highly inflammable target and only lightly defended but, they argued, similar attacks, led by specialist crews, would achieve comparable results against even strongly defended targets. To gather support for the efficacy of incendiaries, Morley wrote to T. Hutson of the Fire Service Department of the Home Office. He, in turn, wrote to twelve Fire Chiefs in heavily blitzed areas in England who all agreed that incendiaries were the main cause of fires.

They were asked,

What, speaking in round figures, is your personal experience of the percentage of the total number of fires caused by enemy action which originated from high explosive and incendiary bombs, including oil bombs, respectively ?²⁵

Personal estimates of fires caused by incendiary bombs were between seventy and ninety-eight per cent, but averaged out at eighty-nine per cent. Their estimates of fires caused by HE ranged between two and thirty per cent, but averaged out at eleven per cent.²⁶

Baker passed the information to Harris, who, in reply, noted that he had read the papers with interest but claimed that both he and the Air Ministry were in agreement on the need to increase incendiary percentage in bomb loads. He continued, "I am also, however, convinced that a good ration of H.E. is always necessary for moral effect. We have got to kill a lot of Boche before we win this war."²⁷

Criticism of Harris's attitude regarding the use of incendiaries continued. Late in April 1942, Freeman cited the relative failure of four recent attacks on Rostock. These failures, he warned Harris, resulted from the reduced number of incendiaries employed, coupled with the failure to achieve concentration. He made clear that he was not opposed to the use of "blasters" but the proportion of HE carried should never be at the expense of material capable of making satisfactory fires.²⁸ Harris replied that he considered Freeman had been

misinformed. Lübeck, Harris explained, had been an exceptional target and could not be compared with any other target in Germany. Rostock, by comparison, apart from a small section of old mediaeval town, had many wide open spaces and broad avenues. Harris then admitted that he disagreed with the laid down policy in respect of the use of incendiaries. His argument was that

The moral effect of H.E. is vast. People can escape from fires, and the casualties on a solely fire raising raid would be as nothing. What we want to do in addition to the horrors of fire is to bring the masonry crashing down on top of the Boche, to kill Boche, and to terrify Boche; hence the proportion of H.E.²⁹

Freeman passed Harris's two-page response to Baker agreeing that, while Lübeck had been an exceptional target, Rostock should have therefore received a greater weight of incendiaries. He concluded his short note with the words: 'We shall have to keep up the pressure on the C.-in-C.'³⁰

Morley, in turn, was asked to comment on Harris's letter. In the main he disagreed with Harris but accepted his suggestion that two-thirds incendiary to one-third high explosive was an acceptable bomb load. Unfortunately, the small number of aircraft available for operations on any one night was a severely limiting factor. In order to produce sufficient points of fire to overcome the fire fighters required that the bombing force carried nothing but incendiaries. Dropping 100,000 incendiaries on Cologne, for example, in a two hour period, was ten times more destructive, Morley claimed, than dropping 25,000 on four successive nights on the same city. The expected introduction into service of an explosive, four pound incendiary bomb, with two or four minute delays, he believed, should further reduce the need for high explosives.³¹

Late in March 1942 believers in the efficacy of the bombing offensive were greatly buoyed by a mathematical confirmation, provided by Lord Cherwell, Churchill's scientific adviser, that bombing would ultimately break the spirit of the German people. From a study Cherwell had made of German attacks on Hull and Birmingham, he calculated that one ton of bombs on a built-up area demolished twenty to forty buildings and made 100 - 200 people homeless.³² It thus followed, Cherwell continued, if every British bomber produced could complete fourteen operations, with an average three ton bomb load on each operation, then each aircraft would de-house approximately 6,000 German citizens. Aircraft production

estimates, Cherwell claimed, were for 10,000 heavy bombers (including Wellingtons) between April 1942 and June 1943. If only half the bomb load of 10,000 bombers was dropped on fifty-eight German towns, about one third of the total population would be rendered homeless. Both Portal and Sinclair accepted Cherwell's mathematics and indicated that his message was "simple, clear and convincing."³³ They, however, added qualifications. Success was dependent upon aircraft production meeting planned targets, the development of additional navigation and bombing aids, that bombers survived on average at least fourteen operations and that there were no significant diversions from the bomber offensive.

Sir Henry Tizard, one-time honorary Scientific Adviser to the former CAS, Newall, challenged Cherwell's assessment and wrote to both Cherwell and the Secretary of State for Air, Sir Archibald Sinclair.³⁴ His disagreement was not related to bombing policy but was rather empirically based. Firstly, he challenged the figures provided by Cherwell, related to possible bomber numbers, as being over-optimistic. He also suggested that Cherwell had been somewhat sanguine in his assessment of average crew ability on night operations. Finally, Tizard rejected the time-frame that Cherwell had envisaged, viewing it as unrealistic.³⁵

The correspondence between Tizard and Cherwell concerning Cherwell's paper, although conducted amicably, drew a veil over their fundamentally different bombing philosophies. Cherwell believed that area bombing, with its industrial destruction and de-housing coupled with a consequent lowering of German morale, would bring victory. His paper, employing grossly inflated figures and over-estimation, was a mathematical attempt to prove his theory. Tizard's perceived path to victory followed more pragmatic lines. He appreciated the realities of aircraft production and was well aware of the consequences of losing the battle in the Atlantic. Bomber Command expansion, he considered, was a long term project. Although in one letter to Cherwell he had claimed that he did not "disagree fundamentally with the bombing policy,"³⁶ he was well aware that this would require a front line bomber strength of at least 4,000 aircraft. He doubted such numbers could be reached even by late 1943. His fear was that by attempting to win the war by area bombing "with a much smaller force it will not be decisive, and we may lose the war in other ways."³⁷

Sinclair accepted Tizard's letter of 20 April with a word of thanks for his support of bombing policy: "I am grateful for your reassurance that you did not disagree fundamentally with our bombing policy."³⁸ Thus, by the end of April, what had started out as a protest by Tizard was being interpreted by the Secretary of State for Air as an indication of support for current bombing policy. As time would show, Tizard was right and Cherwell was wrong, but in April 1942 even this disagreement served only to heighten Cherwell's *mana* and increase his influence with Churchill, Sinclair, and Portal. Correspondingly, Tizard's stock with the hierarchy fell, although in the wider community he continued to command respect.

Lord Cherwell's paper was, of course, of great comfort to believers in high places of the significance of the air offensive, and exerted considerable influence. Sadly, it converted few, settled nothing, and disbelievers remained in limbo. Controversy continued and the Government, in April 1942, seeking an unbiased independent judgement, appointed Mr Justice Singleton to undertake an enquiry.

Singleton had been given an impossible task. He was asked to define the results to be expected from the bombing offensive, at greatest possible strength, over the next six, twelve and eighteen months. His calculations were to be based on the experience gained from German bombing in England and any other information available. Such indeterminates provided no firm basis or starting point for his enquiry. The imponderables were numerous and his report, filed on 20 May 1942, provided no answers. As Cherwell pointed out to Churchill, the only time that Singleton came close to reaching a conclusion was when he wrote: "I think there is every reason to hope for good results from a bombing policy."³⁹ It was not a great foundation for basing the planning policy for the strategic bombing offensive for the next year or eighteen months.

In May and June 1942 Harris mounted three 1,000 bomber raids. They were, of course, significant events in the air offensive but they were aberrations. The first, Cologne, was successful in that fire-raising, Gee-equipped Wellingtons and Stirlings, marked the three aiming points and concentration was achieved in an attack lasting only ninety minutes. The follow-up attacks on Essen and Bremen were scattered affairs that achieved very little. At that stage of Bomber Command development these were singular events and such numbers were not produced again until 1944.

Shortly after the Cologne attack, Bufton was asked by Portal whether he thought that Harris, who had only been AOC Bomber Command for four months, should be replaced. Bufton, for several reasons, supported his retention. He applauded Harris's tenacity in organising the attack on Cologne, coupled with the significant improvements noted in bombing concentration. He also supported Harris's efforts in fending off those, such as Coastal Command and the Special Operations' Executive, who were attempting to divert Bomber Command crews and aircraft for their own purposes.⁴⁰

Concern, however, was also expressed by Bufton, late in June 1942, concerning the apparent lowering of standards in bombing accuracy. Crews were taking the easy path, he believed, and were simply bombing the first fires they observed rather than taking time to identify the briefed target. But taking time in the target area was never a popular activity. He called for "Immediate energetic and positive action to prevent this prodigal waste of our bombing effort."⁴¹

Another worry, becoming evident late in June 1942, was the shortage of magnesium, a vital ingredient in the manufacture of the four-pound incendiary bomb. Bottomley, Freeman, and Baker, met in late June to consider the problem. A draft was prepared for Freeman's signature requesting Harris to reduce the use of incendiaries. As a follow-up to previous correspondence calling for maximum use of incendiaries, it could not have been an easy letter to write. Rostock was one example of wasted effort, Freeman observed, when weather conditions did not favour the use of incendiaries. Bremen, when blind bombing using Gee had been employed, was another. In such conditions concentration was not achievable. He concluded: "In the meanwhile . . . you must go easy on the expenditure of this type of bomb except when conditions clearly favour its use."⁴²

Not unnaturally Harris was somewhat bemused and distressed by Freeman's letter. In his response to Freeman he pointed out that the latter's letter of 27 April had called for increased use of incendiaries and that no mention had been made of possible shortages. He also reminded Freeman that Air Vice-Marshal Saundby, Senior Air Staff Officer (SASO) at Bomber Command Headquarters, had previously warned Baker that incendiary production was to be reduced but Baker had claimed that supplies were adequate even for increased usage. Harris disclaimed responsibility for the shortage of incendiaries and denied that they had been wasted. Bomb loads, he confirmed, would be

reversed. High explosives would henceforth make up two thirds of bomb loads and incendiaries one third. As on other occasions, Harris then continued his attack on members of the Air Staff. Doubtless Bottomley and Baker were responsible for your letter he complained to Freeman, adding, much against my wishes they have continually urged increased use of incendiaries. "I hope that you will now rub their noses in it!"⁴³

The year 1942, as far as Bomber Command was concerned, had been marked by tremendous endeavour, heavy casualties, but few successes. Cologne, and the 1,000 bomber raid on the night of 30/31 May 1942, was an exception. The effort, however, was not sustainable. With a total of about 500 medium and heavy bombers on unit charge, that meant that, on average, Bomber Command would be hard pressed to provide 350 serviceable aircraft on any particular night, even for a maximum effort operation. Bomber Command, in 1942, simply lacked the capacity to deliver the Cologne weight of punch at regular intervals. Moreover, the Operational Training Units had been hard hit in the 1,000 bomber operations, and the losses of seasoned instructors and crews about to graduate were additional blows to Bomber Command's expansion programmes. Cologne was a remarkable propaganda success but, considering the numbers of aircraft involved, industrial damage was amazingly light.

Notwithstanding, the question of incendiaries versus high explosive bombs remained. It was also becoming apparent that German decoy fires in large industrial complexes were very effective in misleading British bomber crews. On too many occasions the first arrivals in the target area were deceived by the fires they sighted. Naturally, their sticks of incendiaries on the decoys were accepted as the aiming point for the remainder of the bomber force. Morley, in a note to Bufton, suggested that, as an interim measure,

In order to obtain an immediate improvement in the effect of our bombing, and until we can obtain the concentration essential to a successful incendiary attack it is suggested that H.E. bombs only are dropped.⁴⁴

It must be recalled, however, that at the time of this note the arguments regarding the Path Finder Force were reaching a climax. Morley, in concluding this note, stressed that

The formation of the T.F.F. [Target Finding Force] and the successful employment by this force of new aids such as Oboe, Marker bombs etc. would demand an immediate return to the incendiary technique in which the incendiary bomb is employed as the primary weapon of attack.⁴⁵

Later in 1942 Bufton was again involved in the debate. Reports of raids on Munich and Mainz indicated that many aircraft released their incendiaries not on flares marking the target, but rather on flares that had been released in an effort to locate the target. He argued that a common tactical doctrine was necessary to achieve success. Although Bomber Command Headquarters issued the basic orders for an attack, Groups, Stations, and even Squadrons, superimposed their own interpretations and emphases on the original instructions. Bufton called for increased support for the newly formed Path Finder Force which was attempting a difficult but vital task with insufficient backing and with too many inexperienced crews.⁴⁶

The apparent failure of the attack on Munich on the night of 19/20 September 1942 had revealing repercussions. Although only involving a small mixed force of eighty-nine Lancasters and Stirlings, Harris was quick to express his anger at their lack of success and attempted to apportion blame. In a blistering letter to Air Vice-Marshal Alec Coryton, AOC 5 Group, he insisted that the lack of damage in the city was

beyond any shadow of doubt due firstly to the carriage of an utterly inadequate quantity of incendiaries in the make up of the bomb load and, secondly, to a lack of concentration by later arrivals which can also be ascribed very largely to the lack of fires in the city As a result of disobedience of orders or failure to carry out orders with regard to the bomb load, this raid, potentially a highly successful one, carried out not without heavy loss at great range, was ruined as a successful military operation.⁴⁷

Coryton was instructed that one or more of the individuals responsible, whether through negligence, stupidity, or sheer disobedience, were to be removed to less responsible positions, or be put up for disposal. If blame was not immediately attachable, a Court of Enquiry was to be convened, and a Summary of Evidence taken.

Much as Harris would have done, Coryton stood his ground, informing Harris that he would

take the full responsibility for the orders which are issued on operations from this Group I do not write this with any form of threat in my mind but, quite honestly, I could never look up again if I felt any member of my staff was being penalised because I was not prepared to accept my responsibilities . . . if anybody has to be removed I would much prefer to go myself than to pass the blame to others. We must each have some principles in life which we are not prepared to break, and this one I must stick to.⁴⁸

Harris's response was terse and to the point:

The view which you take in this matter, although pedantically correct, is practically quite wrong similar unilateral interference by individuals with the orders issued either by you or your Command will in no circumstances be permitted, and that the most drastic action will follow in any future cases.⁴⁹

The significance of this exchange is that although Harris had displayed that he was prepared to bend or ignore orders issued to him — and would continue to do so — he had no intention of permitting any of those subordinate to him following a similar path. Specific bomb loads for Harris continued largely to be a matter of his preference and not subject to what he identified as the whims of the Air Staff.

Coryton, however, had become surplus to requirements and in February 1943 he was advised by Harris that Portal had been asked to find him another appointment. Harris praised the work that 5 Group under Coryton had carried out but explained that

There must also be complete unanimity of doctrine and of understanding if the conduct of operations is to proceed smoothly and with the rapidity of decision necessary under the ad hoc conditions imposed by the weather, on the one hand, and the ever changing operational situations on the other . . . you have displayed persistent and apparently unresolvable differences of view with me and with my staff You are leaving therefore because . . . you do not fit into our pattern. I do not say you are not right. But we are the majority and in that sense it is therefore you who are out of step.⁵⁰

In closing, Harris commented on their more than twenty years of friendship and made clear that he had stressed with Portal that there was no requirement for an adverse report. Five days later, on 28 February 1943, Air Vice-Marshal The Hon. R. A. Cochrane replaced Coryton as Air Officer Commanding 5 Group, Bomber Command.

A largely ineffective daylight raid by 5 Group Lancasters on the north Italian city of Milan, on 24 October 1942, provided support for Bufton's call for a better understanding of the principles required for a successful incendiary attack. In this particular raid concentration was not achieved, an insufficient number of incendiaries were dropped, and no explosive incendiaries had been included in the bomb loads. Baker's comment was that clearly Bomber Command is "a long way from being instructed in the employment of the incendiary technique."⁵¹

In November 1942 Morley suggested means whereby what he called "the missing link in the incendiary technique" could be provided.⁵² Although exploding incendiaries had first been introduced in the 1,000 bomber raid on Cologne, their delay fuses were of very short duration. German fire crews were able to attack incendiary fires almost as quickly as they were located and civilians had been instructed in methods to render them harmless. Morley requested that long delay fuses be fitted to all incendiary weapons. His suggestion presented many difficulties. In the case of the smaller incendiaries they appeared insurmountable. In order that the area covered by sticks of incendiaries could be rendered suspect for several hours, he made clear, required that high explosives with variable long delay and non-disturbance fuses be included in bomb loads. With the knowledge of that possibility in the back of their minds, enemy fire crews would approach all fire scenes with a certain amount of trepidation. Long after the "all clear" had sounded fire crews would know that they were still in danger.

Bufton prepared a minute incorporating Morley's suggestions and forwarded it to the Director of Operational Requirements in the Air Ministry. He pointed out that the weapon required was of the greatest importance and that it should be on the highest priority.⁵³ Baker forwarded his own minute supporting the concept and suggesting that, in future, bomb loads should comprise eighty per cent normal incendiary bombs, ten per cent exploding incendiary bombs, and ten per cent high explosives with delays of up to six hours.⁵⁴

For the remainder of the war there is very little evidence of controversial material relating to incendiary weapons in the papers of the staff in the Directorate of Bomber Operations. New weapons were developed, and there were problems with supplies, but only of a minor nature. The one on-going refrain was the need to provide constant reminders to Bomber Command of the percentage of incendiaries that should be carried in any mixed bomb load. As late as March 1944 Bufton, then Director of Bomber Operations (DBOps), was still being reminded by his staff of the apparent shortcomings in Bomber Command. He was asked to encourage Harris “to increase materially the ratio of incendiaries to H.E. carried and . . . emphasise that only enough H.E. bombs should be carried to break windows, discourage fire fighters and interrupt services.” According to the writer of this unsigned note either Bomber Command, or the Groups, were confusing “maximum bomb load” with the more vital “effective bomb load.”⁵⁵

One lesson that had been learned early in 1942, however, was that if action was required of Harris it was indeed necessary to keep the pressure applied. A second lesson, perhaps not fully absorbed immediately, was that Harris, who had served two terms in the Air Ministry, possessed an already developed suspicion of staff motives. Bottomley, he claimed in a post-war interview with Seward, “was doing his damndest the whole time to discredit me in the hope of getting my job.”⁵⁶ As for the Directorate of Bomber Operations, responsible to Bottomley, Harris even objected to the name. He called it “idiotic nomenclature” and assumed that Directors believed that they were running the war when, as he asserted, it was the responsibility of the appointed Commander-in-Chief.⁵⁷

This first contretemps between Harris and staff in the Air Ministry is indicative of the problems that always exist between higher authority, required to satisfy a multitude of demands, and a field commander with one identified responsibility. The broad sweep of the strategic direction of the war was determined by politicians and Chiefs of Staff. In the case of the Royal Air Force, Bomber Command was then given its specific task, or tasks, in order of priority, by means of Directives which should have been lessons in clarity and precision.

Unfortunately, this was not always the case. Loose wording all too often permitted deviations from the ordered requirements. These deviations may have been deliberate; contrariwise, they may simply have been misunderstandings. Prior to issuing the Directive it was the CAS’s responsibility to ensure that the task

ordered was able to be met with the materiel and personnel, with reserves, available to the field commander.

Bomber Command went to war in 1939 with the Air Staff articulating the destruction that would be created to identified German military targets by precision bombing but having, in the back of their minds although rarely expressed, the significant reduction in German morale to be obtained from a rain of bombs on their cities. Bomber Command's doctrine, developed during the late 1920s and 1930s, was based on the belief that the bomber would win the war. The need to defeat the enemy air force, in order to be able to conduct an effective bombing offensive, was ignored. As a consequence Bomber Command itself became the first victim of its own beliefs. Thus, early in the war, the means by which it was believed the struggle would be won were identified as simply not up to the task. Harris, of course, was not responsible for the largely obsolescent aircraft with which Bomber Command was initially equipped, and neither was he responsible for the inadequate training or lack of aids provided for the bomber crews. But what must be noted from this initial confrontation between Harris and the Air Staff is that Harris had early made clear that he would not be easily turned from the path that he had decided his bombers would follow.

During the Second World War Portal, as CAS, fought the war on several fronts — on the Home front appeasing politicians and the Naval Chief of Staff, but also in Europe, Atlantic, Mediterranean, and the Far East areas. Harris had but one front to deal with. The demands placed on Portal, however, impinged directly on Harris as men and materiel were transferred to face other specific threats thereby reducing Bomber Command's capacity to complete its nominated task. It was to be an increasingly serious problem as the war progressed and, as we shall see, relations at the highest levels became seriously strained. What began as minor differences developed into major disagreements and offers of resignation. That, however, was all in the future.

End Notes

¹ Harris Papers H111, 39A, Harris to Bottomley, 14 November 1940, p. 2, para. 13.

² Probert, *Bomber Harris*, p. 101.

³ Raymond H. Fredette, *The Sky on Fire*, (Shrewsbury, 1991), pp. 160-71.

⁴ Webster and Frankland, Vol. IV, p. 129, para. 4(ii).

⁵ Ibid., p. 252, footnote.

⁶ PRO AIR 20/3802, *The Value of Incendiary Weapons in Attack on Area Targets*, 23 September 1941, p. 4, para. 22.

⁷ Bufton Papers, 3/24, 11 October 1941.

⁸ Ibid., 3/26, October 1941, Ellwood to Baker, p. 3, para. 11

- ⁹ Dewdney, an oil expert, was sent to Bomber Command as an oil adviser. Later, when he became head of the Research and Experiments Department (RE8), he was given the rank of Squadron Leader.
- ¹⁰ Bufton Papers, 3/26, p. 1, para. 1, 18 October 1941.
- ¹¹ Bufton Papers, 3/25, Bottomley to Peirse, 25 October 1941, Appendix A
- ¹² Bufton Papers, 3/24, Morley to Baker, 8 November 1941, p. 3, para. 12.
- ¹³ PRO AIR 14/696, Elworthy to Group Commanders, 10 November 1941, para. 5.
- ¹⁴ Bufton Papers, 3/50, 2 January 1942. There is no response on file from either No 1 or No 4 Groups AOCs or SASOs.
- ¹⁵ Ibid., 2/5, *Suggestion for Increasing Efficiency of Night Attack*, 5 November 1941.
- ¹⁶ Ibid., 3/47, Bottomley to Baldwin, 14 February 1942, p. 2, para. 5.
- ¹⁷ Gee, although often described as a radar device, employed no pulse echoing system. It used a 'master' and two 'slave' stations about 200 miles apart with the master in the middle. Two sets of synchronised pulses were observed on a cathode ray tube and the difference in time between reception of master and one slave was noted and could be located on an overprinted map. The time difference between reception of master and the other slave station was taken simultaneously and that provided another line on the Gee chart. The intersection of the two time difference lines was the aircraft's position at the time of the observation. The work activity for navigators in Bomber Command using Gee required a fix every six minutes.
- ¹⁸ Portal Papers, Christ Church, File 9, 1942, 3a, Cherwell to Portal, 27 February 1942.
- ¹⁹ Portal Papers, File 9, 1942, 3b, Portal to Cherwell, 28 February 1942.
- ²⁰ Portal Papers, File 9, 1942, 3c, Harris to Portal, 2 March, 1942, para. 4.
- ²¹ Ibid., para. 9.
- ²² Harris Papers, Royal Air Force Museum, H53, 1, Baker to Harris, 21 March 1942, p. 2, para. 6.
- ²³ Harris Papers, H53, 2, Harris to Baker, 26 March 1942, pp. 1 and 2.
- ²⁴ PRO AIR 20/4768, Harris to Freeman, 29 April 1942, para. 3.
- ²⁵ PRO AIR 14/3523, Baker to Harris, 9 April 1942, para. 3.
- ²⁶ Ibid.
- ²⁷ Bufton Papers, 3/11, Harris to Baker, 11 April 1942, para. 2.

- ²⁸ PRO AIR 20/4768, Freeman to Harris, 27 April 1942, p. 1.
- ²⁹ Ibid., Harris to Freeman, 29 April 1942, para. 5.
- ³⁰ Ibid., Freeman to Baker, 1 May 1942, para. 4.
- ³¹ Bufton Papers, 3/27, Morley to Bufton, 10 May 1942, paras. 3 and 5(d).
- ³² Wilson, *Churchill and the Prof*, p. 74.
- ³³ Webster and Frankland, Vol. I, p. 332.
- ³⁴ Tizard Papers, Imperial War Museum, HTT/167/1 and HTT/969/9, both dated 15 April 1942.
- ³⁵ Ronald W Clark, *Tizard*, (London, 1965), p. 312.
- ³⁶ Tizard Papers, HTT 969/11, Tizard to Sinclair, 20 April 1942, para. 3.
- ³⁷ Ibid., para. 4
- ³⁸ Tizard Papers, HTT 969/14, Sinclair to Tizard, 30 April 1942, para. 1.
- ³⁹ PRO PREMIER, 3/11/4, Cherwell to Churchill, 28 May 1942
- ⁴⁰ In October 1991 Anthony Furse, author of *Wilfrid Freeman*, (Staplehurst, 2000), conducted an extended interview with Sydney Bufton. There are seven tapes plus a script. This section was on Tape 3, Side B. Future quotations from these tapes will be given as Bufton Tape, Tape - ,Side - . Note that in Richards, *Portal of Hungerford*, p. 314, the author says that Portal's question regarding Harris's future was posed either late in 1943 or early 1944. Bufton, on Tape 3, Side B, asserted that Richards had the date wrong. Perhaps Richards' praise of Bufton's '*objectivity*' was relevant, even in 1942. In a letter to Martin Middlebrook in 1972, Bufton said that staff in the Directorate of Bomber Operations became frustrated with Harris when he appeared unwilling to conform to terms of Directives he received. He explained to Middlebrook that "Bomber Operations had agreed among themselves that we would have forgiven C-in-C Bomber Command everything had he put an extra 15% of Bomber Command effort on precise targets." Bufton Papers, 5/13, Bufton to Middlebrook, 7 September 1972, p.7.
- ⁴¹ Bufton Papers, 3/20, Bufton to Baker, 25 June 1942.
- ⁴² PRO AIR 20/4768, Freeman to Harris, 1 July 1942.
- ⁴³ Ibid., Harris to Freeman, 4 July 1942, p. 2.
- ⁴⁴ Bufton Papers, 2/6, Morley to Baker 7 August 1942, p. 1, para. 7. Underlining in the original.
- ⁴⁵ Ibid., p. 2, para. 13. Note that T.F.F., Target Finding Force, was an early suggested name for the Path Finder Force.
- ⁴⁶ Ibid., 3/14, Bufton to Baker, 2 November 1942, paras. 4 and 8.

⁴⁷ Harris Papers, H59, Harris to Coryton, 3 October 1942, paras. 2 and 3.

⁴⁸ Ibid., Coryton to Harris, paras. 2 and 4, 6 October 1942, paras. 2 and 4.

⁴⁹ Ibid., Harris to Coryton, 7 October 1942, paras. 1 and 3.

⁵⁰ Ibid., Harris to Coryton, 23 February 1943, paras. 2 and 7.

⁵¹ Bufton Papers, 3/26, Baker to Bufton, 16 November 1942.

⁵² Ibid., Morley to Baker, 18 November 1942, para.20

⁵³ Ibid., Bufton to Director of Operational Requirements, 26 November 1942, para. 12.

⁵⁴ Ibid., Baker to Deputy Director of Operational Requirements, 29 November 1942, paras. 6 and 7.

⁵⁵ Bufton Papers, 3/26, B. Ops. 1 to Bufton, 20 March 1944, para. 2.

⁵⁶ Saward Interview, Tape 4, Side A, 1972.

⁵⁷ Ibid.

Chapter Four

Formation of the Path Finder Force

The prime mover in the efforts to form a Target Finding Force (TFF) was Wing Commander S. O. Bufton, DFC who, as Commanding Officer of No. 10 (Bomber) Squadron from 11 July 1940 to 11 April 1941, had carried out nineteen operations and had learned at first hand of the extreme difficulties the bomber crews faced not only in locating the general target area but also in identifying, marking and bombing the nominated target. He subsequently commanded No. 76 (Bomber) Squadron and then for six months had been Station Commander at RAF Pocklington. On 1 November 1941 he took up duties in the Air Ministry as Deputy Director of Bomber Operations. In a note to the Director of Bomber Operations, Air Commodore J. W. Walker, later in November, he expressed his concern

at the present time, firstly with the low efficiency which we can expect from our bomber forces in the location of targets and, secondly, with the inaccuracy of the actual bombing at night . . . At the present moment, however, the 'last 20 miles' problem seems an insuperable one. I am convinced, however, that this difficulty can be quickly overcome simply by employing the right tactical methods. While tactics are discussed and evolved on an individual crew basis, there does not seem to be any effort at co-ordination . . . I suggest that the time is now ripe for the formation in Bomber Command of a 'K.G. 100' equivalent [the German TFF] and that the development of tactical methods and coordination . . . be tackled energetically and immediately.¹

Bufton's disquiet was that the bomber offensive had been ineffective because the tactics employed had been developed at squadron, and in some cases, crew level, rather than being determined at Group or Command level. Moreover, inefficient flares and inaccurate flare positioning had meant that bombing concentration was impossible to achieve. Although tactics had been based on the provision of a significant incendiary conflagration, this required continuous target illumination throughout the attack if accurate bombing was to be achieved. Unfortunately the flare dropping aircraft were rarely well co-ordinated while the incendiary loaded aircraft frequently neither identified nor even saw their

target before bombing. It was essential, Bufton argued, that the flare and incendiary crews were briefed together and were made fully aware of what they were required to achieve. Even then, he insisted, only the best crews will be successful. Bufton's solution was the formation of a TFF "well drilled, of high morale and of the highest quality."²

Bufton admitted that the introduction of Gee navigation equipment would increase the chances of crews navigating to the target area but the problems of identifying the target remained. Failure to identify the target city was a crucial problem and flares or incendiaries wrongly positioned meant that crews arriving later tended to assume that the flares, incendiaries or decoys they observed were the briefed target. His point was that successful operations required the first arrivals at the target to not only find the target but also illuminate and mark the aiming point. It was therefore essential that first arrivals were specialists of proven ability, welded into closely located units, under one control, in the shape of a TFF.

The outline plan for the TFF suggested by Bufton was that it be comprised of two squadrons of heavy bombers and four squadrons of medium, all fitted with Gee, and that they be closely located under one control. The crews of the squadrons selected to serve in the TFF, he continued, should be transferred to their new command *en bloc*. One third of the selected squadrons' crews should then be replaced by forty selected crews, about one crew from every squadron in Bomber Command. Subsequent crew requirements were to be met by the selection of highly rated graduates from the Operational Training Units. The TFF was to work in close cooperation with both scientific advisers and a Bomber Development Unit, still to be established, so that new ideas could be fully considered and tested by experienced crews with minimum delay. The selection of officers to command the TFF squadrons was considered critical.

The advantages of a specialised TFF foreseen by Bufton were that by making it responsible for target finding, illumination and marking, plans could be formulated quickly and refinements generated from the undoubted enthusiasm of the participants. With the fullest attention being given to bombing developments, combined with effective leadership, new navigation and bombing aids could be put to best use prior to their becoming available to squadrons outside the TFF. Once it was fully appreciated that successful operations were utterly dependent upon

them, TFF crews and squadrons would make every effort to find, illuminate and mark the selected targets and specific aiming points.

Buften's call was widely supported by VCAS Wilfrid Freeman (initially with reservations), ACAS Bottomley, Oxland (I Group), Carr (4 Group), DBO Walker, Director of Intelligence F. F. Inglis, the Navigation Section in Bomber Command Headquarters, scientific advisers Sir Henry Tizard and Lord Cherwell, Arthur Morley (in the DBO) and, finally, sixteen squadron and station commanders with extensive operational experience, including Bennett, the future leader of the Pathfinder Force (PFF), and a future bomber baron, Willie Tait. Carr gave his support in November 1941 but, apparently under pressure from Harris at a conference in June 1942, signified his opposition to the TFF, as did all the Group Commanders.

The Chief of the Air Staff, Sir Charles Portal, was apparently aware of the pressure that Buften was applying for the formation of a TFF from March 1942 because at that time he added a note to the material that Buften had sent out to his former operational friends. It made clear that "The Corps d'elite principle is only bad when all units have the same job. The T.F.F. has a different job and would therefore be regarded as a specialist force and not a Corps d'elite."³ From June 1942 his support became crucial.

When Air Marshal Arthur Harris took his place as Air Officer Commanding-in-Chief, Bomber Command, on 22 February 1942 he was well aware of the enormous task he had undertaken and the many problems that faced his bomber crews. The Butt report of August 1941 had revealed that very few bombs were hitting their target and, unless this situation could be improved dramatically, Bomber Command itself could be in jeopardy. Politicians were most unlikely to vote vast sums to a non-productive war weapon. During the winter of 1941/42 the Command had adopted a policy of conservation in an effort to build up its strength. The bombers operated when weather conditions allowed but no attempts were made to challenge the German defences in any extremes of the European winter. Harris had clearly identified his responsibilities; Bomber Command expansion was imperative; he had to enthuse the bomber crews; convince Churchill that Bomber Command could be a viable and significant force, and take the war to the enemy under the terms of the Directive he had inherited when taking office.

This Directive, issued on 14 February 1942, ordered that attacks were to be delivered on industrial areas in Germany both within and beyond the range of the

new navigational aid Gee (which was not operationally employed until the night of 7/8 March 1942) with the aim of creating destruction and lowering the morale of the enemy civil population, particularly that of the industrial workers. As a disciple of Trenchard who lauded the principle of the offensive, it was a war path with which Harris readily identified. In a Note to Churchill and the War Cabinet in June 1942 he emphasised that

The purely defensive use of air power is grossly wasteful Bomber Command provides our only offensive action yet pressed home directly against Germany. All our other efforts are defensive in their nature, and are not intended to do more, and can never do more, than enable us to exist in the face of the enemy.⁴

Harris, however, unlike Trenchard, never attempted to quantify, numerically, the relationship between the destruction and dislocation caused by bombing, and the resultant effects on morale. Morale and material effects, he believed, were inter-related — the greater the damage his bombers could create, the greater the effect on enemy morale

Harris was fully cognizant of the fact that with only fifty heavy and 250 medium bombers⁵ he did not possess a force capable of meeting the full requirements of his Directive. His primary need was a vast expansion of his bomber fleet but he knew that it would be a long struggle and was well aware that it would bring him into conflict not only with the Air Staff who were required to fill many demands for aircraft, and the Admiralty, who required long range aircraft for anti-U-boat operations, but also politicians. On 25 February 1942 the Lord Privy Seal, Sir Stafford Cripps, had made a speech in the House of Commons questioning

whether in the existing circumstances, the continued devotion of a considerable part of our efforts to building up this Bomber Force is the best use we can make of our resources I can assure the House that the Government are fully aware of other uses to which our resources could be put.⁶

If bombing was to be successful Harris was well aware that accuracy was but one requirement; concentration in both time and space was imperative. Concentration meant that the German fire and rescue services were overwhelmed

and, as German defences developed, provided some protection for the bomber crews. Harris regarded the area bombing campaign about to begin as the way to victory. Bufton, on the other hand, accepted area bombing as a necessary first step towards the time when Bomber Command, Target Finding Force led and equipped with the latest navigational and bombing aids, could deliver accurate attacks on precision targets. The grounds for future dispute — differing bombing philosophies and discordant personalities — had thus been early defined.

It would appear from an early date, from the tapes that he later prepared with his biographer Dudley Saward, that Harris had determined that bombing performance would be improved not necessarily by the establishment of a Target Finding Force, but rather by reorganisation within the individual bomber Groups. The first objection that he raised against the formation of a Target Finding Force was that it gave the appearance of the establishment of a *force d'élite*. His view was that the creation of such a force would mean that the morale of all the squadrons would fall when their best crew was posted into the new unit. He also predicted a problem among the crews transferred into the TFF when they realised that promotion, which previously had been almost automatic, had now become highly competitive. Additionally, with the limited number of crews available in early 1942, Harris foresaw administration problems in attempting to provide sufficiently experienced crews to maintain a fully operational and useful TFF. His first suggestion, which he had employed in 5 Group in the first year of war, was that which had been followed by Bufton when in command of No. 10 Squadron late in 1940 — select the best squadron crews to lead the attack. A little later, when it appeared that cameras would become more readily available to Bomber Command crews, Harris advocated that the squadron or squadrons obtaining the most accurate aiming point photographs in any month should be selected as the Target Finding Squadron (or Squadrons) for the following month. He believed that the competition engendered to become the lead squadron would bring about overall improvements in bombing performance.

Harris, in April 1942, with the support of all his Group Commanders and senior staff members, was still continuing to defend his rejection of the TFF. Firstly he admitted to having a very open mind on the question of the TFF but explained to Bufton that he had yet to be convinced that it was necessary. It would appear he possibly believed that Bufton was interfering in matters outside

his area of jurisdiction as the Deputy Director of Bomber Operations. Harris also discounted the support provided by senior squadron and station commanders who had enthusiastically agreed with Bufton's call for a TFF. He explained,

Much as I appreciate and pay attention to the ideas of the lads who really do the work, they necessarily have a very circumscribed view on any particular subject and are not given to appreciating any factors outside those which affect their own comparatively narrow spheres.⁷

Furthermore, Harris, in this same letter, made clear that with Gee apparently performing well there was no requirement for a TFF. He continued,

I am convinced now, after the last two months [sic] experience, that generally speaking the target when it can be seen at all is being correctly found . . . there is also not the least doubt that over the last few weeks the progressive development of the TR.1335 techniques has led to the majority of our bombs landing usefully in built up areas . . . reasonably close to the intended target . . . I am not prepared to accept all the very serious disadvantages of a Corps d'Elite in order to secure possibly some improvement on methods which are already proving reasonably satisfactory and certainly very costly to the enemy — at serious loss of morale and efficiency to the other Squadrons.⁸

For a rounded picture of the path finding story it is first necessary to consider a little of the history of the German Air Force – known after March 1935 as the *Luftwaffe*. In 1933, Major-General Walter Wever, the first Air Force Chief of the German General Staff, set out to build an independent strategic bombing force. In a speech he delivered at the opening of the Air Warfare and Aero-Technical Academies at Gatow in Berlin on 1 November 1935, he told the first intake of students they must never forget that “the bomber is the decisive factor in aerial warfare. Only the nation with strong bomber forces at its disposal can expect decisive action by its air force.”⁹

In 1934, in the effort to fulfil this dream, the development of a four-engined bomber was accorded top priority by the German air staff. They were not alone, for air power enthusiasts in the United States, Great Britain and Russia, were setting out along similar paths. For all, it seemed, the heavy bomber with its ability to strike at long range, was confirmation of air service autonomy. By 1936 Germany had developed and flown two prototypes, the Dornier Do19 and the

Junkers Ju89. Unfortunately, from the German point of view, despite their impressive appearance, the engines of both aircraft were under rated and their performance consequently mediocre. Both programmes were cancelled until more powerful engines became available. This cancellation, coupled with Wever's death in 1936, in an air accident at Dresden, very largely marked the end of German efforts to develop a heavy, four-engined, strategic bomber force.

Like the majority of the *Luftwaffe* staff, General Albert Kesselring, Wever's successor, favoured smaller bomber aircraft more suited for tactical operations with the army but also capable of whatever strategic operations were required.¹⁰ As a continentally based power, Germany, it was appreciated by both the military and political authorities, was vulnerable to invasion because of its extensive land frontiers. Rearmament was thus a matter of urgency in case foreign powers, anxious to forestall another rise of German militarism, should physically intervene. Time, the Germans decided, was not on their side. There was no point in attempting to develop a capacity to inflict strategic damage if, meanwhile, the Fatherland was being overrun. Rearmament, as far as the *Luftwaffe* was concerned, became the effort to develop the largest possible air force in the shortest possible time. This required concentration on a twin-engined bomber force.

The Spanish Civil War also provided significant lessons for the *Luftwaffe*. At Franco's request – because of artillery shortages – medium bombers were employed in a close tactical support role. Guernica was a name, tainted with horror, that flashed around the world. European politicians and peoples were imbued with the fear of the bomber.¹¹ A notion had been born that total victory in another war could be achieved by air power alone. German leaders came to believe that a medium bomber force – a much less user of scarce raw materials and manpower than heavy bombers – could secure that success. The complete and rapid victories gained by the *Wehrmacht* in Poland, Scandinavia, the Low Countries, France, and in the early months of the invasion of Russia in 1941, added further credence to that view.

Although German efforts to create a heavy strategic bomber force had largely ended by 1936 – the year that specifications were set out in Great Britain for what would ultimately result in the Stirling, Halifax, and Lancaster – *Luftwaffe* planners were ahead of the British in at least one respect. They had recognised

that bombers, heavy or medium, would require precise navigation and bombing aids. Thus, while Royal Air Force bomber crews were still attempting to use 'Bradshaw' methods and map read their way to the target, at least until the arrival of Gee in March 1942, *Luftwaffe* bomber crews, often captained by the navigator, had, since 1939, been equipped with accurate electronic navigation and bombing aids, *X-Gerät* (X-device) and *Knickebein* (crooked leg).¹²

Both these aids were developments of the Lorenz blind approach landing system, but while the *Knickebein* system could be used by all aircraft fitted with the Lorenz blind landing receiver, and without the need for special crew training, the *X-Gerät* required both additional equipment and crew familiarisation. The first German bomber unit to be fitted with *X-Gerät* was *Kampfgruppe 100* (*Kgr 100*). Path finding over the British Isles began on the night of 13/14 August 1940 but the greatest success came on the night of 14/15 November 1940 when aircraft of *Kgr 100* led 552 German bombers in a heavy and successful attack on Coventry.¹³

Indicative of a gap that had developed between those in the Air Ministry responsible for the direction of the bomber war, and those who nightly had to attempt to overcome the problems in the face of mortal danger, was an incident regarding these German beams. The scientists dealing with the problem were investigating the possibility of flying down the beam and bombing the transmitter complex. Air Marshal Sir Philip Joubert, who had worked in the radar section of the Signals Department, supported their efforts. He wrote to a senior Air Staff officer in the Air Ministry recommending that action be taken. He was rebuffed. The response Joubert received, dated 1 February 1941, was that the German beams appeared to be causing the British authorities to lose their sense of proportion. They did not constitute a significant threat, he was informed, as they were only a navigation aid and barely useful even in that capacity. "We use no beams ourselves" the writer continued, "but we bomb just as successfully as the Germans bomb, deep into Germany."¹⁴ The senior officer respondent in the Air Ministry was the Deputy Chief of the Air Staff, Air Marshal Harris who, just over a year later, would become AOC Bomber Command.

Path finding in the Royal Air Force was not the result of any blinding flash of inspiration by any one individual. Nor did it result from the examination of bombing methods employed by the *Luftwaffe*. Rather, path finding was employed by the Royal Air Force because if Bomber Command was to retain its position as a viable

offensive weapon the bombing results had to improve. Bufton's role in the establishment of the Path Finder Force was not as its inventor but as its champion. Without the pressure he applied, and the dogged persistence he displayed in pursuing his aim, even against the awesome authority of Harris, Bomber Command's role in the war could well have been reduced with who knows what result.

One of the first letters relating to the perceived need for some form of target locating force was that written on 1 February 1941 by D Dewdney, the civilian oil expert. Late in 1940 he had occasion to visit several Bomber Command squadrons where he spoke with crew members. He learned at first hand that individuals were calling for the establishment of some form of target finding force. Dewdney passed the request to Air Marshal Sir Richard Peirse, then head of Bomber Command.¹⁵

Lord Cherwell was also early in the target finding force picture. In September 1941, greatly disturbed at the Butt Report released the previous month, he wrote to Churchill. He suggested that Bomber Command should

re-examine most carefully the possibilities of making specially expert navigators, or bombers equipped with special navigation aids, fly ahead of the main body to light fires in the right region for the rest to home on, as the Germans do.¹⁶

Cherwell continued in the same vein in February 1942. His letter was to Portal this time and was prompted by what he considered ill-advised criticism of the efforts of Bomber Command in both the House of Commons and the House of Lords during debates on the war situation. His argument was based on the need to be able to rely, in most circumstances, to get from ten to twenty bombers to what he termed the "right place." He lamented the lack of experimentation undertaken to find ways to ensure that more bombs found their targets and, as we saw earlier, suggested that one of the bomber groups, with someone like Air Vice-Marshal Slessor in charge, be given the task of finding the target.¹⁷

Portal, however, was early aware that positive action was essential. He knew that Bomber Command had to improve its performance and he was prepared to offer suggestions as to how this might be achieved. On 17 August 1941, in a letter to Sir Henry Tizard, now working in the Ministry of Aircraft

Production, he had made clear that it was essential that the limited bombing effort should be seen to have positive effects. His letter related to the future use of Gee navigational equipment. Well aware that the aid would initially only be available in limited numbers, he suggested to Tizard that perhaps the best plan might be to emulate the methods employed by the *Luftwaffe*. His suggested plan was to fit the equipment in aircraft manned by specially selected and trained crews who would create fires in the aiming point area for the guidance of the main bulk of the bomber force.¹⁸

Squadron Leader Morley, Bomber Operations 1, was of similar mind. In a six page assessment of the night bombing policy being pursued by the Royal Air Force, he called for the techniques employed by the *Luftwaffe* to be duplicated by Bomber Command. He pointed out that the German fire-raising crews leading the attack were specially trained and equipped airmen. Their task was to find the selected target and place their incendiary loads as near to the aiming point as possible. The resulting fires, initiated by these specialists of proven ability, would “act as a first class marker beacon to the main force of aircraft carrying H.E. bombs and it is strongly urged that we should adopt similar tactics.”¹⁹

Nor was the urgent need for something to be done to improve bombing results confined to the squadrons and the Air Ministry. The same understanding had also been reached by some in Bomber Command Headquarters at High Wycombe itself. The Navigation Section, on 1 November 1941, offered their solution in a paper entitled ‘The Problem of Navigating to, Locating and Bombing of a Target by Night.’ After pointing out the difficulties and potential errors of dead reckoning navigation, map reading, radio position finding and astro navigation, they offered their solution. The paper called for the formation of “Squadrons specially trained and equipped for the task of target location.”²⁰ It also stressed the importance of crew selection and the need for the hand-picked crews to be provided with the latest navigational and radio equipment on a priority basis. The paper was distributed to the AOCs of 1, 3, 4 and 5 Groups and their comments invited.

A major disadvantage under which Bomber Command suffered throughout the war was that Air Officers Commanding all the Bomber Groups, with one exception, lacked recent operational experience. The exception was Air Vice-Marshal Donald Bennett of No. 8 (Path Finder Force) Group, formed in January

1943. An additional problem in November 1941 was that all the Group Commanders had been away from active flying appointments for at least nine years. In the case of Air Vice-Marshal Sir John Slessor of 5 Group, the absence had been thirteen years. Thus the practical lessons they had all learned in the Middle East, Iraq, and India, were not relevant to the problems facing the bomber crews in late 1941. Nevertheless, their responses to the paper from Bomber Command Headquarters showed that some were prepared to read, listen and learn. Their freedom of action under Harris from February 1942 was to be much more circumscribed.

Responding to the paper, Air Vice-Marshal Robert Oxland, I Group, agreed that there was a

strong case for the formation of target locating squadrons. The possibility that the target locators will make a mistake and lead the 'followers' astray is admitted but it is considered that occasional, perhaps frequent successes might . . . counter balance the failures.²¹

Oxland felt that only above average crews should be selected for the target locating squadrons and that specialised training should be provided.

Air Vice-Marshal Sir John Baldwin, 3 Group, also admitted the need for selected crews to lead bombing raids but he opposed the formation of special target locating squadrons. He cited the loss of experience on front line squadrons, a lowering of *esprit-de-corps*, and the difficulties of providing replacement crews solely from the Operational Training Units. His suggested solution was that the torch bearers should be selected crews in the normal front line squadrons.²²

Air Vice-Marshal Sir Roderick Carr, 4 Group, agreed that previous efforts with selected squadrons acting as fire-raisers had not always been successful. Crews, he continued, had been of average efficiency and were, in many cases, inexperienced. Carr's summation was that

target finding Squadrons composed of selected and specially trained pilots, assisted by all the aids to navigation presently available, seems to be the best solution, and to offer the most favourable prospect of successful target location.²³

Slessor, 5 Group, strongly opposed the establishment of special target locating squadrons. He perceived problems with training the selected squadrons and asked why all crews could not be trained to do what was their duty — find the target.²⁴ Too many crews, he argued, were staying at altitudes that made target identification impossible and too little time was spent in the target area in the effort to locate the aiming point. Perhaps these criticisms underline the desirability of senior commanders having an appreciation of modern war. When Slessor took command of 5 Group in May 1941 his most recent experience of night bombing had been in 1917 on the Arras Front.²⁵

The paper issued by the Navigation Section in Bomber Command was, however, welcomed by Bufton, who responded with a wide ranging analysis.²⁶ With regard to the establishment of a target finding force, he pointed out that even if the targets were not located accurately on every occasion, Bomber Command would be no worse off than it was at the present time. If conditions made it possible for the target to be identified and marked then there was every possibility that the system would work as intended and the bombers would become an effective force.

As far as crew selection for the proposed force was concerned, Bufton admitted that taking the best crews from Groups might well cause problems. He made one concession. Specially selected crews were desirable but they were not essential. It was a view that he would later change. He urged that the scheme be given a trial because he believed that the successes that would be achieved would bring about a change of attitude among the non-believing group commanders. Of primary importance was the early establishment of the tactical organisation. He also argued that the target finding force should be equipped with aircraft of the same type. Aircraft of varying speed, weight carrying capability, and height limitations, created undesirable complications for planners. Additionally, it should be so located that regular and frequent meetings and discussions could be held to formulate a common doctrine and build up understanding and mutual confidence.

Although Bufton only assumed responsibility as Deputy Director of Bomber Operations on 14 November 1941, he was not idle during his first days at the Air Ministry. As early as 5 November, while still only a supernumary, he wrote a minute suggesting ways in which he considered the efficiency of night attacks could be improved.²⁷ He admitted that some squadrons had developed

techniques aimed at improving bombing results but such systems, he argued, were on too small a scale to significantly improve the overall efficiency, or accuracy, of the raids. This particular minute highlighted the methods that he had initiated when leading No. 10 (Bomber) Squadron at Leeming. These were that much greater use be made of flares and that an overall plan be made for each bombing raid. Co-ordination of the bombing force was essential.

Later in November Bufton again minuted Baker on the subject of tactical developments in Bomber Command, hammering the need for co-ordination of the bombing effort. If the maximum effect was to be obtained the bombing force had to be organised and the specific requirement for each element of that force detailed. Although he admitted that there would be opposition and prejudice, with each squadron considering itself at least as good as the next, he defined the requirement for a target finding force as imperative. His conclusion was that "the time is now ripe for the formation in Bomber Command of a 'K. G. 100' equivalent, and that the development of tactical methods and co-ordination . . . should be tackled energetically and immediately."²⁸

The day that Bufton wrote this minute he also wrote another to a staff member in the Directorate of Bomber Operations, Wing Commander Cleland. Entitled 'Daylight Bombing' at Night,²⁹ this paper advised Cleland that plans were being considered for attacks to be headed by a small force of specially selected crews charged with the responsibility for locating the target and keeping it illuminated with a high concentration of flares. To develop this plan he sought information from Cleland on the flare carrying capacity of various aircraft, could a large salvo of flares be released from small bomb containers, and how many flares could be carried in stowages within the fuselage adjacent to aircraft flare chutes?

Both these papers were read by Baker, the Director of Bomber Operations, and he advised his deputy that the themes were well worth pursuing. In order that they could be forwarded, he suggested that they be combined in one paper to be sent to Bomber Command.

The paper that resulted, dated 29 November 1941, was Bufton's outline for a target finding force. He first pointed out that bombing results had deteriorated because aircrew casualties had meant that much of the pre-war experience had been lost. Shorter training for replacements had meant the lowering of both target finding and bomb aiming standards. Moreover, the flares that had barely been

adequate when bombing from 10,000 feet were ineffective when employed from the 15,000 feet at which the bombers had been forced to operate because of improved German searchlight and *flak* efficiency. Tactics were also criticised. Although crews were still given precise aiming points, even an individual building in a city, these were usually impossible to identify and crews had settled for attempting to drop their bombs within the built-up areas. As far as tactical planning was concerned, Bufton argued that apart from one or two joint routing attempts, inefficiently carried out, there had been nothing.³⁰

In this important letter Bufton pointed out that for bombing results to improve, problems arising within twenty miles of the target must be solved. They were the location, identification, illumination and marking of the precise aiming point. He suggested that the co-ordinated and extensive use of flares might well provide the answer. Individually flares were virtually useless but if used *en masse* their true value might be realised.

Tactics were Bufton's next consideration. Although all crews were trained to a particular standard there were always some above the standard, a few below, with the majority average. His argument was that if his flare homing beacon plan was adopted it was essential that the initial target finding force consisted of above average crews. He also admitted that numerous arguments might be raised opposing his suggestions. There were many factors to be considered. They related to training, development of ideas, the size of the force – four or five squadrons were suggested – and the necessity for the latest in navigational and bombing aids to be provided, even if they were in short supply.

In concluding his submission, Bufton recommended that the proposed system be given an operational trial immediately. But, indicative of the state of flux then existing in the higher command of the Royal Air Force, and the slowness of the wheels within Bomber Command, the first trial of Bufton's flare technique did not take place until the night of 3/4 March 1942.³¹ On that night the Renault works in Boulogne-Billancourt, just west of Paris, were attacked with significant success. This target, lacking *flak* defences, was accurately bombed in good weather and in full moonlight conditions, from a low level, and required no penetration of German territory. What it indicated was that there might well be merit in Bufton's ideas. But, as time was to show, considerable opposition still remained to be overcome.

Paradoxically, in the light of subsequent events, the Boulogne-Billancourt attack occurred shortly after Harris became AOC Bomber Command. Although it did not convince him that precision attacks were possible, it should perhaps have alerted him to the possibility that suggestions of some value were being generated in the Directorate of Bomber Operations. He subsequently provided few reasons to show that any lesson had been learned.

Throughout the winter of 1941 and 1942 there was a mounting chorus of criticism directed at the strategic bombing offensive. It came from politicians, army and navy circles, and the public at large, and was widely publicised in what is now known as the tabloid press. Bufton was of the opinion that it was useless to attempt to allay the doubting Thomases either by promises of what might be done in the future, or what had been done in the past. Bombing to date had been confused, inaccurate, and of very doubtful value. The unsatisfactory results achieved, he observed in a letter to Baker, were the result of the lack of tactical direction of the bomber forces. Unless immediate steps were taken to improve the situation Bomber Command risked losing its pre-eminence as an offensive weapon. In addition, the bombing policy pursued by the Air Staff would be seen to have failed.³²

Bufton called for personal disagreements and prejudices to be put aside and the opportunity taken immediately to form a target finding force. With the new equipment now becoming available to Bomber Command there was no reason, he believed, why the improved bombing results so urgently required, should not be obtained. "Form a target finding force, cut away the dead wood throughout Bomber Command" he advised, "and so tighten the sinews of control that the bomber force may be wielded and directed as a dynamic, flexible, hard hitting instrument."³³

In a covering minute that Baker attached to Bufton's letter when it was forwarded to Bottomley, he made it very clear that he strongly supported his subordinate. He was unsure whether or not Portal should see the letter and left it to Bottomley to decide. "But," he concluded, "I am sure something in these terms needs to be put to the C in C if the Command is to achieve the high aims towards which our plans are laid."³⁴

Harris, too, was concerned at the mounting criticism directed at Bomber Command. His uneasiness was related to the possible effects such criticism might

have on the morale of the bomber crews. He suggested “that those who make these wild and unfounded charges so lightly, and so often solely to serve ends and interests, be now instructed to reckon well the cost.”³⁵ He made, however, no promises for either improvements in results or changes in tactics.

Early in March 1942, in an unsigned letter, the Station Commander at Royal Air Force, Feltwell, called for the formation of what he called a “Bomber Commando Force.”³⁶ His suggestion, addressed to Group Captain Gray, Headquarters No. 3 Group, was that two squadrons should be formed, comprising specially selected crews chosen for their offensive spirit, wide experience, and superior skills. His belief was that the results such a force could achieve would improve morale throughout Bomber Command. He made no suggestion that they should form any type of target finding force but rather that they should operate either individually or as a pair. His letter evoked no response.

Harris’s only suggestion for improving bombing results was that all Groups should aim at intensifying the bombing effort in good weather conditions and reducing operations when conditions were either doubtful or bad.³⁷ Although the conservation of the bomber forces ordered by Churchill on 11 November 1941³⁸ had been lifted by the Directive issued on 14 February 1942, Harris was well aware that the critical crew position in Bomber Command left little margin for extravagant or risky ventures.

Early in March 1942, Baker, concerned at the lack of progress, asked Bufton to briefly summarise the arguments supporting the establishment of a target finding force. Bufton began by declaring that the bomber offensive had been ineffective because the individual tactics employed, using sub-standard flares, had failed to concentrate the bombing effort.³⁹ Additionally, there had been delays in instituting changes while Bomber Command awaited the arrival of Harris and until the first operations using Gee had been carried out.⁴⁰

Bufton next pointed out that to achieve success it was necessary to co-ordinate the incendiary and flare parties in any attack and that they should be briefed together and have a complete understanding of each other’s roles. This, he argued, could only be attained by the establishment of a Target Finding Force made up of highly skilled and determined crews under the leadership of a specially selected and gifted officer with operational experience. Six squadrons were initially nominated for the force – including No. 75 (Bomber) Squadron, the only

New Zealand unit in Bomber Command. Each of the nominated squadrons was to be bolstered, where necessary, by posting in one or two first class crews from other Bomber Command squadrons.

Buften's paper admitted that his proposals could lead to a dilution of quality crews in some squadrons. However, he reasoned, any dilution would be slight and would occur only once because later replacement crews would be selected from the top crews graduating from the Operational Training Units.⁴¹ Change was essential, he continued, because even the best crews were becoming disheartened at the increasingly obvious lack of success. Although the recent raid on Boulange-Billancourt had raised morale, the failure at Essen on the night of 8/9 March 1942, despite the availability for the first time of Gee, had had a dampening effect. The paper called for the immediate establishment of a target finding force. Such a force, Buften claimed, would raise morale throughout Bomber Command and "the increase in their efficiency and determination would eclipse any small effect that dilution would produce."⁴²

On 15 March 1942 Buften and Baker were invited to High Wycombe to attend a meeting with Harris, his Group Commanders and their Senior Staff Officers, to discuss the target finding force.⁴³ That morning, prior to the official meeting, Baker and Buften met privately with Harris. During their early confrontation Harris explained what he saw as potential difficulties with the formation of a *corps d'élite*. He also mentioned that the transfer of highly qualified crews to the target finding force could jeopardise their promotion prospects. At this point Buften thumped the table. "Sir," he exclaimed, "you are not going to win the war that way. These chaps aren't interested in promotion. They don't know whether they are going to be alive tomorrow."⁴⁴ Harris then looked at his watch and suggested it was time for lunch.

After lunch the full meeting was opened by Harris, who declared that before lunch he had almost been assaulted in his own office over the question of the target finding force. He then informed the gathering that he was implacably opposed to the formation of any such force. Opinions were then invited from the floor. Apart from Buften and the officer detailed as secretary, no other at the meeting had operational experience of the problems being encountered in the night bomber offensive. Few questions were asked and the Group Commanders then gave their unanimous support to Harris.

Without possibly putting their appointments at risk, could they have done otherwise? Regrettably, their enforced support of Harris's position is strong evidence that they lacked the moral courage later to be displayed by Air Vice-Marshal Sir Alec Coryton. All were no doubt aware that they held their positions only for as long as they were required by Harris. They also were aware that Harris resented opinions that conflicted with his own and in this case he had made his position very clear. Even so, it must be remembered that in November 1941, Oxland of No. 1 Group and Carr of No. 4 Group had both supported the notion of a target finding force, while Baldwin of No. 3 Group, although opposed to the formation of a target finding force, had believed that there was a need for selected crews to lead bombing raids. Their *volte face* could be considered, perhaps uncharitably, to have rendered their responses invalid. Nevertheless, no matter how it was contrived, Harris could still claim that he enjoyed the full support of all his Group Commanders. Of all those at this momentous meeting only Slessor of No. 5 Group, who in opposing the suggestion of a target finding force had at least been consistent, was prepared to admit later to Bufton that in supporting Harris he had been wrong.⁴⁵

Bufton's feelings after this meeting on 15 March 1942 must only have been those of frustration. The Butt Report had confirmed what he and many others already knew: the bombing war was not being won. What was even worse was that nothing was apparently being done to remedy the situation. In order to provide an identifiable aiming point targets had to be located and marked. Bomber crews knew this and their calls for some form of target finding force were supported by both Lord Cherwell and Sir Henry Tizard. In addition, at least two Group Commanders, staff in the Navigation Section in Bomber Command Headquarters, and the Directorate of Bomber Operations, were all agreed that a target finding force was essential. Thus, Bufton must have gone to the meeting with Harris in March with high hopes. Perhaps it was at this first meeting that he came to appreciate the strength of the opposition provided by the AOC Bomber Command. The support that he had been tacitly promised by Carr and Oxland faded in the face of Harris's vehemence and Bufton must have appreciated that it was going to be a long and difficult struggle.

The following morning Bufton met Harris on the Air Ministry steps and they walked up together. Before parting Harris invited Bufton to put on paper any

further ideas he might have regarding the target finding force and they would be considered.

The next day, Bufton sent Harris the first in a series of letters expounding his ideas, supported by staff of the Directorate of Bomber Operations, on the subject of the target finding force.⁴⁶ It was the first salvo in a paper war in the corridors of power. The introduction stated that the ideas had been maturing for some time and were not the result of any flash of inspiration. They were the carefully considered lessons he had learned as both a squadron and station commander, together with the continuing exchange of information with personnel still employed on bombing operations. He confirmed that when he arrived at the Air Ministry in November 1941 the subject of a target finding force had already been given considerable thought. His initial involvement had been the recommendation that a vastly greater number of illuminating flares would increase the number of crews able to identify the target and improve bombing results. The immediate and urgent requirements were the co-ordination of the bomber force to achieve concentration, and the formation of a target finding force.

Bufton also admitted that there could be difficulties. One was possible dilution of experience in squadrons not selected for the target finding force. This could be easily overcome, he explained, by the fact that no more than one crew would be withdrawn from each of the unselected squadrons. Later replacements for the new force would come from carefully chosen crews graduating from the Operational Training Units. Thus, any small dilution would be non-recurring.

The advantages foreseen following the formation of a target finding force, Bufton claimed, far outweighed the admitted possible criticisms. With target location and marking the responsibility of six closely located squadrons, the development of tactical methods would eventuate after discussions and trials. Refinements would also follow as the systems evolved. Then, enlarging on the theme which remained constant in the Directorate of Bomber Operations' repertoire, Bufton pointed out that precision targets such as oil plants, and others beyond Gee range like the ball bearing factories in Schweinfurt, would become vulnerable. He was clearly not yet fully aware of Harris's commitment to area attacks.

A warning note was also sounded in this first letter to Harris. Where previously the tactics employed had been dependent on individual ability, the

pendulum had swung and all Bomber Command's eggs were now placed in the Gee basket. The aid had been long awaited and great hopes had been placed on its usefulness as both a navigational and bombing aid. But Bufton warned that Gee might possibly have a short operational life

which will result in a reversion to our former ineffective tactics. We must exploit TR1335⁴⁷ fully and immediately by coupling with it the highest degree of operational ability . . . if this were done through the medium of a target finding force, the latter would remain an effective spear-head, when TR1335, had been denied to us as a target finding device.⁴⁸

No immediate response from Harris was received from this first letter so, early in April 1942, the Directorate of Bomber Operations enlisted the support of the Directorate of Intelligence, Operations (D of I [O]). In a paper, jointly prepared, they commented on the criticisms voiced with regard to the perceived failures of the bombing offensive. Although better results were promised for the future, they argued that unless outstanding improvements became evident, there would be another calling to account. In their opinion, Bomber Command had been "reluctant to learn by experience."⁴⁹

The threat, the paper continued, was that if Bomber Command's results fell below the anticipated expectations

there is a very grave risk of our striking force being subjected to a constitutional change which disregards the accepted principles of the role of a bomber force. This might prove calamitous in spite of an apparent justification for the disintegration of Bomber Command. There are powerful agents at work to bring this about.⁵⁰

Indeed there were. Mention has already been made of the mounting criticism directed at Bomber Command, the failure to expand, the diversion of effort, and the Butt Report, which had showed that bombs were not hitting the target. But, in addition by March 1942, the war situation had also changed. The German drive in Russia had been halted, not least by winter snow, and America, with her vast manpower and industrial resources, was now involved. America's entry however was a double edged sword. Her insistence that American aircraft be crewed by American airmen meant that Bomber Command expansion was further hindered. There were also the diversions to which Bomber Command was

continually subjected: bombers and crews to the Middle and Far East, squadrons to Coastal Command, and the absolute necessity to win the war at sea. It was pointless to build an enormous bomber fleet if the war was lost at sea. Thus, with Bomber Command's future role remaining ill-defined, what was required within the Royal Air Force was a unanimity of aim. Instead, even between the Air Ministry and Bomber Command, there was persistent discord and, all too often, acrimony. Doubts flourished and arguments raged concerning the form to be taken for the strategic bombing offensive.

In April 1942 hopes had been raised by Lord Cherwell. Earlier that year two scientists, Solly Zuckerman and J B Bernal, carried out an examination of the effects of German bombing on Birmingham and Hull. Anticipating their report, Cherwell prepared a minute for Churchill.⁵¹ It was a Trenchardian vision and a ringing endorsement of the area bombing campaign inherited by Harris under the terms of the Directive issued on 14 February 1942. Unfortunately, as we have already seen,⁵² although the mathematics were clear and simple, the numbers used and the conclusions reached, were wrong. Tizard, in his response, took the opportunity to remind Cherwell that under the law of diminishing returns, many bombs would simply add to the damage already created and provide nothing additional.⁵³ Cherwell's paper had summarised hopes but failed to convert the sceptics.⁵⁴ The bombing path to victory remained ill-defined.

Equally disappointing, for the optimists anyway who had hoped for at least something, as mentioned in the previous chapter, was the lack of guidance able to be provided by Mr Justice Singleton.⁵⁵ His summation of the bombing offensive, presented on 20 May 1942, was that he did not think that it

ought to be regarded as *of itself* sufficient to win the war or to produce decisive results; the area is too vast for the effort we can put forth; on the other hand, if Germany does not achieve great success on land before the winter it may well turn out to have a decisive effect, and in the meantime, if carried out on the lines suggested, it must impede Germany and help Russia.⁵⁶

Singleton's suggestions as to possible outcomes were all heavily laden with provisos. The vagueness of the Report meant that rather than provide the desired ray of hope, it simply exacerbated the arguments that raged concerning bombing policy.

In forwarding the joint paper prepared in April by Bufton and the Directorate of Intelligence to Sir Wilfrid Freeman, the Vice-Chief of Air Staff, Bottomley, signified his strong support for the formation of a target finding force.⁵⁷ According to Anthony Furse, it was about this time that Freeman also became a supporter of the campaign for the formation of a target finding force.⁵⁸ Bufton was gathering powerful allies.

Late in March 1942 staff in the Directorate of Bomber Operations approached the question of the target finding force from another angle. Several, including the Deputy Director, had close contact with squadron and station commanders with wide and recent operational experience. A paper was prepared setting out why it was considered essential to form a target finding force, the advantages of such a force together with the objections that had been raised, and this was sent to these contacts. Much of the paper was a repetition of that which, sent earlier to Harris, had failed to evince a direct response. Two questions were asked. Did the recipient generally agree with the proposal to form the force and operate under the conditions outlined, or were the objections sound enough to abandon the scheme? Criticisms and suggestions were invited.⁵⁹

A later criticism by Harris, that by contacting Bomber Command members directly without going through the Air Officer Commanding, Bufton had broken Service conventions can be rejected, because Portal was also involved in this exercise. As made clear earlier, Portal had added four lines of his own noting that the *corps d'élite* principle is only bad when "all units have the same job."⁶⁰ Portal then continued by pointing out that the force would have a different job and should therefore be regarded as a "specialist force and not a 'Corps d'elite.'"⁶¹ Portal's addition indicated that he accepted the paper and questions as a reasonable exercise.

Bufton's papers contain sixteen responses to this request; without exception they all vigorously supported his call for a target finding force. Among those who replied were several who would in time be acknowledged as true 'Bomber Barons'. They included the future head of the Pathfinder Force, Don Bennett; J B ('Willie') Tait later of 617 (Bomber) Squadron and *Tirpitz* fame with his DSO and three Bars and DFC; Trevor Freeman, a New Zealander who had joined the Royal Air Force in 1936 and who, after winning the DSO and DFC and Bar and having completed 60 bomber operations in Europe, was killed in action in the Pacific in December

1943; the legendary, one-armed, G A (Gus) Walker; H A Constantine, who would later command 5 Group and J H (Groucho) Marks, destined to die in September 1942 as a Path Finder and Officer Commanding No. 35 (Bomber) Squadron.

One recipient working in 3 Group Headquarters, who agreed fully with the paper, showed it to Baldwin, the Group Commander. He commented he did not expect there would be any great improvement by employing a Target Finding Force. His belief was that Bufton was being too optimistic. "Perhaps" he continued,

his operational experience has become a little dimmed since he occupied the office chair at the A. M. and allowed his suspicions of Group and Operational Station Commanders to get the better of him!⁶²

When one considers that Bufton had been away from the operational arena for less than six months, and Group Commanders had no operational experience of modern war conditions, the sarcasm rings somewhat hollow. What Baldwin's note did make clear to Bufton was that the long-held prejudices of senior non-operational commanders were not going to be easily broken down.

Because of the overwhelming support he received, Bufton decided, despite the promise of secrecy that he had given, that Harris should see all the considered opinions of a cross section of operational commanders. He acknowledged that many of the replies were outspoken but requested that Harris study them impartially and believed that they would prove to be enlightening.⁶³

Harris's first acknowledgement of both Bufton's original letter of 17 March 1942 and the follow up of 11 April 1942 enclosing the operational staff's considerations, was dated 17 April 1942.⁶⁴ His response confirmed his dogged determination to resist change and preserve the *status quo*. Harris admitted that he had found the letters interesting but argued that the writers were not in a position to be able to appreciate wider concerns. He also confirmed that the Group Commanders and the majority of Station Commanders, who had again discussed the matter on 16 April, remained opposed to the formation of a target finding force. With cameras becoming more widely available, he continued, "the squadron or squadrons producing the best results in finding and photographing the target will be designated for the ensuing month as the Target Finding Force."⁶⁵

Harris then went on to claim that over the preceding two months the designated targets were usually being located. He also maintained, as we also saw earlier, that thanks to Gee “the majority of our bombs [were] landing usefully in built up areas of the Ruhr reasonably close to the intended target.”⁶⁶ In fact official reports made a nonsense of his claims. In eight raids on Essen from 8 March to 12 April 1942, ninety per cent of the bombs fell between five and one hundred miles from the target. In three of these raids forty-nine photographs were taken but none within five miles of the target. With regard to an attack on Gennevilliers on the night of 5/6 April, a short range, distinctive, and lightly defended target, eighty-eight per cent of the photographs were not of the target. For a raid on Hamburg on the night of 8/9 April, 272 aircraft took part but of the seven photographs taken, none were within five miles of the target. Three were plotted between thirty and seventy-five miles from the city.⁶⁷ These were facts available to Harris but in order to foil calls for a target finding force he claimed that the bomber offensive was succeeding.

There is, however, the possibility of self-delusion. Harris was a convinced believer in the effectiveness of the area bombing tactics. Did he actually accept the exaggerated claims, provided for public consumption, of Bomber Command’s successes? Conclusive evidence was readily available that the destruction being claimed was not being achieved. What information was being withheld from Churchill and the War Cabinet? What did Churchill mean when he informed Portal that he was “pleased with the weekly digest of Bomber Command’s activities”⁶⁸ that he was receiving? Was it because of the successes that were claimed, or was it simply because he was receiving regular bulletins? It is inconceivable that Churchill would have been happy each week to have received a list of failures.

In his first response to Bufton, Harris had asserted that with regard to the Target Finding Force he had an open mind. Bufton therefore assumed that Harris was prepared to listen to further arguments, so in May he wrote a further letter. Firstly, using the figures from official reports quoted earlier, he argued that the bomber offensive was not achieving the satisfactory results that Harris had claimed. Secondly, while Harris had warned that bomber crew morale would lower as a direct consequence of the formation of a target finding force, Bufton believed that it would be raised. Crews, he observed, would have a greater guarantee of success. As part of a target finding force, he continued, they would

be personally involved and others would aspire to join them. Promotion, he suggested, did not enter largely into the minds of operational aircrew. Most were “hostilities only” volunteers so did not have a career to consider. Besides which, the possibility of imminent death tended to concentrate the mind to the exclusion of such minor matters as promotion.⁶⁹

Buften also opposed the suggestion made by Harris that attacks be led by crews that had in the previous month obtained the best bombing photographs. He agreed that the selected squadrons might well have a limited number of exceptional crews but their best efforts could well be nullified by others of a lesser standard, marking places other than the specified target. The fundamental defect he identified was that chance might very well enable an inferior squadron to obtain good photographs and thus become leader. Having only two or three good crews in the leader squadron, Buften argued, would not provide either sufficient illumination to identify the target, or a large enough conflagration to attract the other crews. Moreover, because the selected squadrons would not necessarily be closely situated, and because there would be constant change, there would be no development of either tactical methods or techniques.

In this long letter Buften also debated whether or not the Group Commanders fully appreciated the gravity of the situation. Had the question regarding the formation of a target finding force been put impartially to Station Commanders? Were those consulted ex-operational commanders, or were they senior officers from another era, lacking experience of modern war? It was Buften’s expressed opinion that too many decisions regarding the bomber war were made by older officers, widely experienced in administrative and organisational matters but unwilling to accept the advice of younger officers with hard-earned operational experience. Attitudes that cramped and frustrated both imagination and the development of ideas proposed by those aware of the problems of modern war, he suggested, were behind the continuing refusal to create a target finding force. He called for the marriage of the “mature judgement and wide experience of the older officers with the imagination, drive and operational knowledge of the younger.”⁷⁰

The letter closed with an apology for the frankness of the views expressed. It had been written, Buften explained, only because of his deep concern for the success of the bomber offensive.⁷¹

No direct reply to this letter has been located in the Harris, Portal or Bufton Papers but Saundby, Harris's Senior Air Staff Officer, was concerned enough to request a staff member in Bomber Command Headquarters to examine and comment upon the contents. Wing Commander N W D Marwood-Elton did so on 11 May 1942. His first comment was that although the writer was "obviously biased"⁷² the conclusions that had been drawn could, on several counts, be justified. Marwood-Elton then compared Bufton's figures regarding bombing photographs with those from the Operational Research Section in Bomber Command. Although there were minor differences, he admitted, they were not enough to invalidate the overall claims. With regard to two successful attacks, he believed, they constituted "a good argument for a target locating force."⁷³

Marwood-Elton then attempted a delicate balancing act. Poor bombing results were being obtained, he argued, because of faulty navigation, bad weather, the enemy's use of decoys, the strength of the defences, and inaccurate bomb aiming. He agreed that the crews that most often located the target were usually those who determined squadron morale. However, he continued, if they were posted to a target finding force, although the number of crews who would locate the target under the first three reasons would increase, the number failing to find the target under the last two would also increase. His summation was that, even if a target finding force was established, "on the balance we would not be much better off."⁷⁴ It was a somewhat incongruous finding.

Nevertheless it was an assessment much to Harris's liking. On Marwood-Elton's paper there is a hand-written annotation: "No further action."⁷⁵

Later in May 1942 staff in the Directorate of Bomber Operations prepared another paper expressing concern at the apparent lack of tactical direction in the bomber offensive. The results obtained, they affirmed, indicated that neither aircraft nor crews had been employed in a manner likely to achieve their fullest potential. A weakness in the control and guidance provided by the Air Staff contributed but the primary problem was the failure of Bomber Command "to assume full responsibility for the tactical direction and control of the bomber force as a single and co-ordinated instrument."⁷⁶ In addition, it appeared that tactical ideas proposed by the Air Staff after wide consultation, had almost without exception, been ignored. The failure by Bomber Command to implement the incendiary plan embodied in the Directive of 25 October 1941 was a classic

example. The fires that were started at Lübeck on the night of 28/29 March 1942, even though the attack was less than half the scale demanded in the original incendiary plan, should have provided convincing evidence to Bomber Command that the scheme was worth pursuing. Instead, Harris had discounted the conflagration at Lübeck, citing it as an aberration.⁷⁷

The major Air Staff failure cited was that nothing had been done to ensure that Directives, issued on behalf of the Air Staff, were fully and effectively implemented. Equally, it was considered that the control exercised by the Air Staff over Bomber Command had been lax in the extreme. This had meant that Bomber Command's delegation of responsibility to Groups had gone unchecked. Consequently, when it was at last appreciated in Bomber Command that tactical failures called for immediate remedies, Air Vice-Marshal Saundby, and the Group Senior Air Staff Officers, lacked the knowledge and the operational experience to either diagnose the problem or provide the appropriate responses.

This May 1942 paper called for only the best men, regardless of age or seniority, to fill key positions. It also maintained that those officers responsible for tactical control must have had operational experience. Once staffing matters had been settled, the paper continued, it was essential that the Air Staff, backed by Portal, became more closely involved in the day to day running of the bomber offensive. Next, Bomber Command itself had to take a much greater cognisance of suggestions and advice initiated by the Air Staff. It was also essential that the direction of the bomber force be centralised so that Bomber Command was in firm control of the night's bombing efforts rather than either Groups or even individual squadrons. The aim, the paper urged, must be to replace Group parochialism, so very evident, with a totally unified bomber force.

Finally, the paper submitted, although the suggested moves struck at the heart of some of the problems facing Bomber Command, they were not necessarily going to provide quick cures. In the field of tactics immediate action was essential if adequate and effective concentration was to be achieved against heavily defended targets. At this point the paper took up the refrain that had been heard before. Without mentioning the words "target finding force" it called for a

special force composed of the most able and determined crews.
This force, with every new navigational and scientific aid at its

disposal, would develop its own specialised technique for fulfilling its role of finding, illuminating and marking the target for the less skilful crews which constitute the large majority of the bomber force.⁷⁸

Although this paper was largely prepared by staff in the Directorate of Bomber Operations, they had not worked in isolation. Air Chief Marshal Sir Wilfrid Freeman, Vice-Chief of the Air Staff, was also involved. Aware that the paper would ultimately be sent to Bomber Command Headquarters, he had suggested changes to the draft, saying that “I think your only way with Bert is to treat him rough.”⁷⁹ Only fifteen days later Freeman did himself what he had suggested to Bufton. In a reply to Harris concerning armoured Lancasters, he confessed that after eighteen months he had become accustomed to Harris’s “truculent style, loose expression and flamboyant hyperbole” and that he would now be glad “if you would carry out the orders given to you.”⁸⁰ Undoubtedly others in the Air Ministry should have followed Freeman’s example. Few ever did.

That all was not going well with the bomber offensive was admitted by Harris on 22 May 1942 in a letter to Oxland, AOC No. 1 Group. Photographic evidence available to Harris showed that despite aircrew claims to have severely bombed Mannheim, damage to the city following a raid on the night of 19/20 May was negligible. Local forests and decoy fires had borne the brunt of the attack. This same letter also discussed the “hopeless” bombing of Rostock on the night of 23/24 April 1942, when little damage had been done to the city. Early arrivals had started fires short of the target and the main energy of the bombing force had been expended on “inoffensive villages, in some cases many miles from the target Area.”⁸¹ As the Official History suggests, this particular letter contradicts the claims made by Harris to Bufton as to the “satisfactory nature”⁸² of the bombing offensive. Rather, it supports the efforts being made by Bufton and others to develop means whereby Bomber Command could justify its continued existence, an existence which Harris admitted in this same letter was under threat unless inefficiencies and “inability to achieve effective work”⁸³ were eradicated. Harris, however, gave no indication that any changes were in the pipe line. Rather, he looked for improvements in the performance of the bomber crews.

The next salvo in the target finding force war was contained in a paper prepared by Bufton and Morley and filed as an Air Staff Paper on 25 May 1942. In

essence, it was a repeat of the demi-official letter Bufton had sent to Harris, at Harris's invitation, on 17 March 1942. As an Air Staff Paper it was therefore given the tacit, if not the acknowledged, support of Portal. As well as repeating earlier calls concerning the requirements of a Target Finding Force, the opportunity was taken to refute the system, instituted by Harris, of appointing raid leaders each month on the basis of successful bombing photographs. According to Bufton and Morley's Paper the system was doomed to fail. Target location, illumination, and marking, required understanding and co-ordination between crews, and adherence to a standard operating procedure. Although a small number of crews from the lead squadrons would possibly locate the target, in the writers' opinion, the majority would only position potential decoys.⁸⁴

The arguments in this paper were based on the firm belief that there was no half-way house as far as a Target Finding Force was concerned. Harris's claim that morale in Bomber Command would fall because some squadrons might lose their best crews was rejected. Bufton and Morley also again rejected the claim that the possible loss of promotion was a viable argument against the formation of a desperately required force. Failure to take positive action, the paper made clear, would mean the failure of the bombing offensive. Diversion of the bomber force to other ends would be inevitable and could neither truthfully nor logically be opposed. Time, they stressed, was of vital importance. Their conclusion made bleak reading. Unless the Target Finding Force was formed immediately, it threatened, "the doctrine of strategic bombing will remain unsubstantiated."⁸⁵

At the end of May 1942 Air Commodore Ellwood, Bufton's predecessor as Deputy Director of Bombing Operations, also pleaded for the formation of a Target Finding Force. At the time that he wrote his letter he was Assistant Commandant at the RAF Staff College where he had attended lectures delivered by both Bottomley and Saundby relating to the bomber offensive. What had disturbed Ellwood was that Bottomley had hinted that resistance to change within Bomber Command, evident in late 1941, still existed. Furthermore, he had been greatly disturbed by Saundby's arguments as to the reasons for rejecting the proposals to form a Target Finding Force. It appeared to Ellwood that advice and direction provided by the Air Ministry was either being ignored or rejected. Bomber Command, by accepting the requirement for raid leaders, had conceded the need for specialisation. The differences between the Air Ministry and Bomber

Command, as he saw them, were based not on principles but rather on methods. Ellwood re-examined all the arguments against the formation of a Target Finding Force including the imagined problems of a *corps d'élite*, administrative difficulties, and the claim by some that Bomber Command already had too many specialist units. He concluded that it would be “manifestly absurd”⁸⁶ for Bomber Command not to take the final step and form a Target Finding Force.

Early in June 1942 Bottomley minuted Freeman concerning Harris’s continued opposition to the formation of a Target finding Force. He suggested that a paper, drawn up in the Directorate of Bomber Operations, outlining current thinking on the subject, be sent to Harris inviting his detailed criticism.⁸⁷ Freeman, on the basis of past experience, believed that it would be a waste of time as it would only result in yet another protracted correspondence with little prospect of progress. In a note to Portal, he suggested a conference be held to discuss the subject attended by three officers from Bomber Command and another three from the Assistant Chief of the Air Staff’s (Operations) Department.⁸⁸ Portal agreed with the suggestion and Harris was advised that the conference was provisionally scheduled for 11 June 1942 and he was invited to bring one or two of his best squadron commanders to the meeting. The meeting was destined never to take place.

More ammunition for Bottomley over the question of a Target Finding Force was provided by a letter from Tizard prior to the planned conference. A copy of the Air Staff Paper, *The Target Finding Force*, dated 25 May 1942, had been sent to Tizard and he responded positively. “I think” he observed, “that if you are to get worthwhile results in the bomber offensive you will have to develop a highly trained and efficient target finding force.”⁸⁹

Perhaps in an effort to short circuit the Air Staff’s designs, Harris, on 10 June 1942, called a meeting of his own at Bomber Command Headquarters. He chaired the meeting and in attendance were the Air Officers Commanding Nos. 3, 4, and 5 Groups, the Senior Air Staff Officer from No. 1 Group, an operational squadron commander from each of 1, 3, 4, and 5 Groups, a scientist, B G Dickens, and a civilian, G A Roberts, the Radio Operational Research Officer at Bomber Command Headquarters.⁹⁰

In opening the meeting, Harris explained that before he was to discuss with Portal the subject of the Target Finding Force, he wanted to confirm the attitude

prevalent throughout the Command. Harris then claimed that he believed bombing accuracy had improved following the introduction of Gee, although special difficulties remained with targets in the Ruhr such as Essen. Perhaps, suggested Harris, the problems might be “cured if it were possible to form a target finding force of sufficient size composed entirely of experts.”⁹¹ Some who heard these words from Harris may have thought that perhaps his attitude had softened. They were to be rapidly disabused. He then explained that it was impossible to form a specialist force because the removal of the best crews from squadrons to form the force would have an appalling effect on the morale of the remainder. Moreover, because foreign and colonial squadrons were not available for selection, and because some squadrons were re-equipping, there were only ten or twelve squadrons available to provide replacement crews. His final point was that crews not selected for the force would get rapid promotion, whereas those chosen would find that competition meant promotion was slow.

Baldwin of No. 3 Group and Carr of No. 4 Group both agreed with Harris in opposing the formation of a Target Finding Force. Coryton of No. 5 Group favoured the system in use of selecting raid leaders on the basis of recent successful bombing photographs. Of the four squadron commanders present at the meeting, two, Freeman of No. 3 Group and ‘Groucho’ Marks of No. 4 Group, had previously enthusiastically supported Bufton’s call for a Target Finding Force. The minutes of the meeting give no indication that their opinions were even requested.

Harris’s summation in closing the meeting was that crews were to be told that the bombing offensive had created massive damage in Germany and that they were not to be disheartened if photographs showed that they had missed their targets. The Ruhr, he pointed out, “was a district of considerable importance . . . and damage to the communications and factories there all helped.”⁹² The aim, he concluded, must be to reduce mistakes in target identification and it had to be recognised that it was an individual responsibility.

Following this meeting Harris wrote to Portal.⁹³ This letter was a further confirmation that as far as Harris was concerned the raid leader scheme that he had initiated pre-empted any requirement for a Target Finding Force. Nothing would be gained, he declared, either by gathering the selected crews into one unit, or by basing them on neighbouring airfields. Despite his persistent opposition to

anything remotely connected to a *corps d'élite*, Harris then admitted that he fully supported a call for his raid leaders to be awarded an identifying badge. This, he suggested, could be the Royal Air Force gilt eagle worn below the wings and medal ribbons, at the top of the left breast pocket.

Harris next pointed out that his Command believed that the problem the crews faced was not in actually finding the target but in seeing it on the average night when faced with *flak*, searchlights, and industrial haze. Why, he asked, would a Target Finding Force have any better chance of actually seeing the target than anyone else? He also claimed that Bomber Command, at this stage, was too small to consider establishing a Target Finding Force. There were also aircraft problems as the Command was in the process of re-equipment and high unserviceability rates were being encountered. Any attempt to establish a specialised force from limited resources would mean that they would be below, rather than above, the standard of the scheme presently in operation.

In conclusion, Harris affirmed that all his Group Commanders and their best squadron commanders “were all decisively and adamantly opposed [to the formation of a Target Finding Force]. The only dissentient” he continued,

was an ex-Squadron Commander from Feltwell . . . But he could offer no reasoned argument for the constitution of such a special force beyond asserting that he wanted to find the target as often as possible. Which naive statement received of course the chorused reply of ‘and so say all of us.’⁹⁴

Portal replied at length to Harris on 14 June 1942.⁹⁵ He asserted that it appeared evident that both the Air Ministry and Bomber Command were agreed that there was an urgent need to devise means whereby the best crews were enabled to find the target and identify it for the remainder of the bombing force. Although Harris and the Bomber Command representatives unanimously opposed the Air Staff suggestions, Portal made clear to Harris that he found no reasonable argument in Harris’s letter to support their disagreement.

The notion that the formation of a Target Finding Force would create a *corps d'élite* was totally rejected by Portal. He pointed out:

To pack one unit with experts at the expense of other units which have to do the same job is most unsound and bad for morale. This

is emphatically not what we are proposing. The T.F.F. would have an entirely different and far more difficult task than the ordinary 'follow up' squadrons and this creates both the need and the justification for having a formation containing none but expert crews.⁹⁶

Harris was then reminded that over the preceding three months his stance had changed substantially. From total rejection he had moved to a Target Finding Squadron and later to a raid leader scheme. Portal made clear he saw no logic in Harris's continuing refusal to go the one extra step and weld the selected crews into a tightly knit organisation. This Portal identified as the nub of the matter.

Regarding crew selection Portal made clear that he disagreed with Harris. He confessed he saw no valid reason why either foreign or Commonwealth crews should not be available for the proposed force. In fact, he continued, a mix of crews could be of benefit.

The admission by Harris of the difficulties that crews experienced in actually seeing the target on dark nights was seized upon by Portal as providing striking evidence that the methods being employed by Bomber Command were unequal to the task. What is required, Portal argued,

is an effective degree of illumination and incendiarism in the right place and only in the right place . . . this admittedly difficult task can only be done by a force which concentrates upon it as a specialised role, and which excludes those less expert crews whose less discriminating use of flares or incendiaries . . . have recently led so many of our attacks astray.⁹⁷

Two copies of this important letter have been located and they differ in one very interesting respect. In the copy at the National Archives,⁹⁸ there is an additional paragraph omitted from the letter held in the Portal Papers in the library at Christ Church.⁹⁹ It is worth quoting because, even at this late stage in the protracted argument, it possibly shows an unwillingness and a weakness on Portal's part to exert final authority — an unwillingness to be repeated in January 1945 over the question of oil targets. In this extra paragraph Portal told Harris he recognised the practical difficulties but considered the proposals that Harris had made did not go "nearly far enough." Portal continued,

I am reluctant to impose the Air Staff proposal upon you while you object so strongly to it. I would therefore like to discuss the subject with you tomorrow as a preliminary to holding the conference arranged for next Thursday, and I hope we shall be able to formulate an agreed scheme.¹⁰⁰

What concerned Bufton when he was shown the letter was that the words “I hope we shall be able to formulate an agreed scheme” could offer Harris a possible escape route. By offering a compromise, Harris might very well establish a force along lines which differed from those desired by the Air Staff. Portal had already displayed a reluctance to order his subordinate to form a Target Finding Force and Bufton wanted no relaxation of the Air Staff demands. Freeman, earlier, had told Bufton how he believed Harris should be handled but this paragraph appeared to Bufton to offer the possibility of concessions. Bufton saw this as the critical moment for Portal to make a stand. In order that there be no misunderstanding of his own position, he advised Freeman that he wanted to “disassociate himself entirely from the possibility of a compromise”¹⁰¹ that he pointed out had been suggested in the additional and offending paragraph. Portal apparently conceded the point because, in the copy of the letter held at Christ Church, the paragraph has been omitted.

Despite Portal’s reluctance to order his subordinate to form a Target Finding Force, he had in fact decided, after consulting Freeman, who had examined Bufton’s comprehensive file on the matter, that it would be formed. On the same day that he had written to Harris, 14 June 1942, Portal called Bufton to his office. Bufton’s file relating to the Target Finding Force lay on the CAS’s desk. “I’ve been through the folder” Portal began,

and have discussed it with the Vice-Chief. We have decided that Bomber Command will form a Target Finding Force forthwith, and I have arranged for the C-in-C to come here to discuss the matter tomorrow afternoon. In the meantime, could you please let me have your ideas on what the force should consist of, on who should be in it, and who should command it.¹⁰²

The following morning, 15 June 1942, Bufton gave Portal his blueprint for the Target Finding Force. He suggested that it should consist of six squadrons and a Bomber Development Unit, the equivalent of another squadron. The

selected squadrons, he suggested, should be located in one area under one control and work in close co-operation with both scientists and the Bomber Development Unit. With regard to crews, Bufton proposed that one third of the crews in the selected squadrons be replaced by forty picked crews – approximately one from each bomber squadron. After calling on the knowledge of other operational members in the Directorate of Bomber Operations, he also provided six names as potential squadron commanders. To command the new force he recommended Group Captain Basil Embry, a tenacious and driving personality who he had first encountered in 1930.¹⁰³ As Embry's Senior Air Staff Officer, Bufton volunteered Donald Bennett. Embry, then serving in Fighter Command as Sector and Station Commander at Wittering, was seen as an outstanding commander while Bennett was the professional in flying, navigation and air operations generally. He saw them as an unbeatable combination.

On 15 June 1942, Harris came to Portal's office. Neither the tone of the discussion nor what was considered at this meeting has been recorded. Nevertheless the decision was reached that a Target Finding Force would be formed. Portal informed Bottomley and Freeman that Harris had agreed to form a "TFF composed partly of tour-expired crews who volunteer and partly of crews from the remaining squadrons in the Command."¹⁰⁴ Harris made three requests: firstly, that Dominion and Allied aircrew be permitted to volunteer for the force, secondly, that captains selected for the force be granted a step up in rank and, finally, that they be awarded a special badge. Portal agreed that he would support the additions requested by Harris.

On 19 June 1942, in a telephone link with his Group Commanders, Harris advised them that, although he and they opposed the formation of what he now called the Path Finder Force (PFF), "we had been ordered to form the Force and we must accept the decision loyally and do our best to make it a success."¹⁰⁵ Unfortunately, his later actions belie his words, making it clear that he resented having been forced to yield. His own words provide an insight into the extent of his displeasure. In the tapes he made with his biographer, Dudley Saward, he was unequivocal. What I wanted, Harris admitted,

and I argued like blazes with Portal over this, I wanted each Group to have its own Path Finder Force . . . Well, I lost that battle . . . but I never for a moment abandoned the intention of having a Path

Finder Force in each Group so I just went my own sweet way. I let 'em form the Path Finder Force and let 'em take a number of the best volunteer pilots who wanted to go there . . . as soon as they got away with the insistence on just the one, I started behind their back on the others.¹⁰⁶

The theme was repeated. Bennett and the Path Finders, Harris continued,

got a lot of absolutely first class people but they didn't get 'em all and they didn't bleed the Groups to death because the Groups, at my instigation, were busy forming their own ideas and their own surreptitious Pathfinders.¹⁰⁷

What this refusal (the word 'betrayal' comes to mind) by Harris to honour the word and spirit implicit in his agreement with Portal cost Bomber Command and the Path Finder Force in particular, must remain a matter of conjecture. One thing is certain. Morale throughout Bomber Command would not have been raised had crews been aware of the attitude adopted by their Commander-in-Chief.

In a personal minute to Churchill on 6 July 1942 Harris, in a reference to the formation of the Path Finder Force, claimed that he had "been overborne by the C.A.S. and the Air Staff."¹⁰⁸ Three years' later, in his *Despatch on War Operations*, Harris varied the accusation. The Air Ministry's insistence that the Pathfinder Force be formed as a separate Group was, he insisted, "yet another occasion when a Commander in the field was over-ruled at the dictation of junior staff officers in the Air Ministry."¹⁰⁹ Harris was wrong. As he had earlier admitted to Churchill, in the minute quoted, the order had come from his superior officer, Portal.

Perhaps because of unavailability, or a possible clash of personalities, or a desire to exert his authority, Harris's selection as AOC of the about to be formed Path Finder Force (which he had decided the new force should be called) was Wing Commander Donald Bennett. An Australian, Don Bennett had transferred to the Royal Air Force in 1931, on loan, after cost-cutting measures in Australia had meant that there was no future in the Royal Australian Air Force for those still under training. After attending a navigation course at Calshot, on the Solent, he was posted to No. 10 (Flying Boat) Squadron based at Pembroke Dock in South Wales. Shortly after Bennett's arrival on squadron, Harris arrived as Station Commander. While serving in the Royal Air Force Bennett became the seventh person in the world to gain a First Class Navigator's License. He also gained

qualifications as a professional pilot, wireless operator, flying instructor, and various ground engineering licences. He retired in August 1935 as a Flying Officer.

During the years of peace Bennett enjoyed a varied flying career culminating in the establishment of the Atlantic Ferry organisation shortly after the outbreak of war. He rejoined the Royal Air Force, as a Wing Commander, in mid-1941. He first commanded No. 77 (Bomber) Squadron flying Whitleys, and then, early in April 1942, was posted to No. 10 (Bomber) Squadron equipped with Halifaxes. On the night of 27/28 April 1942 he was shot down while attacking the *Tirpitz* in a Norwegian fjord. Evading, he returned to England via Sweden and rejoined his squadron. Shortly before he was due to leave England with his squadron, on posting to the Middle East, he was called to the Bomber Command HQ and advised that he had been selected to command the Path Finder Force as an acting Group Captain. On 25 January 1943 the Path Finder Force became 8 Group and Bennett was promoted to Air Commodore. A few months later, thanks to Harris's aggressive handling of the Air Member for Personnel, he became an Air Vice-Marshal. He was then thirty-two years of age.

Harris described Bennett as "the most efficient airman I have ever met."¹¹⁰ But Bennett was intolerant, very conscious of his own intellectual powers, youthful when compared with other Group Commanders, had never attended staff or command courses, and had received accelerated promotion. His on-going arguments with Air Vice-Marshal The Hon. Sir Ralph Cochrane, AOC 5 Group from February 1943, could often be described as acerbic. Cochrane, as AOC of what was called "Cocky's Private Air Force," and another of the Harris-chosen, was perceived by Bennett as being favoured by Harris at the expense of the Path Finders. Cochrane, like all other Group Commanders except Bennett, lacked operational experience and it rankled with both Bennett and Bufton.¹¹¹ But, it must be noted, outside No. 8 Group it could not be held that Bennett was a popular figure.

Decision-making is one thing, implementation another. In the case of the establishment of the Path Finder Force it was to require a protracted period of negotiation. The major stumbling block concerned the question of promotion. Harris had requested that aircraft captains transferred to the Force be granted one rise in rank and this had been accepted by Portal.¹¹² Then, in a broadcast to all

Groups on 19 June 1942, Harris went further and promised that every member of every crew posted to the Path Finder Force would receive automatic promotion.¹¹³ He did, however, qualify the statement by saying that the question of promotion had still to be confirmed.

The question of promotion dragged on interminably. In an effort to overcome the apparent *impasse*, Harris sought Churchill's assistance. He informed the Prime Minister that despite repeated appeals from himself and the Air Ministry, Treasury had remained obdurate. His letter ended with a plea to Churchill to ensure that every crew member selected for, or volunteering for, and qualifying as a Path Finder, be granted a step up in rank. Churchill, at the foot of the sixth page, addressed a question to the Chancellor of the Exchequer: "What can you do?"¹¹⁴

Two days later a meeting was held in the Secretary of State's room at the Air Ministry to discuss the sticking point of aircrew promotion. It was inconclusive. Harris remained implacably insistent that the new force would not come into being without his demands being met for a step up in rank, an identifying badge, and the co-operation of the Dominion squadrons. Sinclair suggested that a plan be produced for Treasury that did not demand promotion for every aircrew member of the proposed Force, but instead, provided the opportunity for either Harris or the Force commander to recommend promotions after the completion of fifteen sorties. With Harris dissenting, it was agreed that the Air Member for Supply and Organisation, Air Chief Marshal Sir Christopher Courtney, should prepare a suggested establishment for the new Force.¹¹⁵

At this point, having seen Harris's letter to Churchill, the Chancellor of the Exchequer, Sir Howard Kingsley Wood became directly involved. In a note to the Prime Minister he suggested that Harris had been premature in appealing to Churchill as, at that time, the matter was still being considered by Sinclair. Although Sinclair supported Harris's call, this was not known to the Chancellor until only twelve hours earlier. Kingsley Wood argued that he opposed the Harris proposals, not on financial grounds, but rather on matters of principle. It could lead, he believed, to a chain reaction of demands from the other Services. He saw no precedent in military history where those facing special dangers in the face of the enemy had been rewarded in such a manner. Churchill saw reason in this

response and told Sinclair that Harris should be made aware of the Chancellor's arguments.¹¹⁶

By the third week of July 1942, Baker, Bufton and Bottomley were all growing increasingly concerned at the lack of progress. Although the question of the step up in rank remained unresolved, Baker, who himself opposed the idea, maintained that the force should be formed immediately and await a Treasury decision. Bottomley echoed Baker's words and suggested that Harris should be instructed to implement the order he had received on 16 June 1942.¹¹⁷ Bufton was equally concerned. With Bennett and his staff already nominated, he had been hoping for more rapid progress than had been achieved. In a note to Portal he admitted that his worst fears were being realised. "There is," he complained, "an absence of goodwill and sense of urgency in dealing with the formation of the force . . . without which it must inevitably prove a complete failure."¹¹⁸

Courtney produced his suggested establishment for the Path Finder Force squadrons at the end of July 1942. It was a compromise between the demands of Harris and the figures for the normal establishment of a heavy bomber squadron. With one-third of the crews to come from the Operational Training Units, he suggested that two-thirds of all posts of Flight Lieutenant and below be upgraded and that Flight Commanders and Squadron Commanders be promoted to Wing Commanders and Group Captains respectively.¹¹⁹

On 11 August 1942 Bottomley confirmed with Harris that the arrangements for the establishment within Bomber Command of the Path Finder Force had received final approval. Crew establishments were to be in accordance with those laid down by Courtney on 28 July 1942. This special establishment, Bottomley advised, provided for accelerated promotion for eligible aircrew after completing particular numbers of operational sorties: for promotion to Flight Lieutenant or Flight Sergeant fifteen sorties, for promotion to Squadron Leader or Warrant Officer twenty sorties, and for promotion to Wing Commander twenty-five sorties. Initially there were to be four squadrons – one Stirling, one Lancaster, one Halifax and one of Wellington IIIs. There was also to be one special squadron associated with the force but established independently.¹²⁰

Despite the extended gestation period, when the crews began to assemble on 17 August 1942, the Path Finder Force was not a finely honed instrument. There had been no crew changes: squadrons had simply been transferred.

Squadrons were lodger units at the bases to which they moved and hence were guests, on sufferance of the Station Commander, who was responsible for the administration and discipline of both the station staff and squadron crews. Neither the Station Commander nor the permanent station staff were members of the Path Finder Force. Orders for the Force commander, Bennett, were routed via Baldwin of No.3 Group and crew replacements and servicing requirements were the responsibility of the group from which the squadron had been transferred.

Harris ignored the long standing calls that had been made requiring a training period for the new force and demanded that they operate on the same night that they moved to their new stations. Fortunately the weather intervened and operations were cancelled. However, they were required to operate the following night against Flensburg and perhaps it is not surprising to learn that the attack was unsuccessful. They had received no special training, they were operating from new bases, they possessed no special aids, the flares and marker bombs were inadequate, and their primary navigation aid, Gee, was now being jammed. When Harris's stubborn and extended opposition to the Path Finder Force is recalled, perhaps it was a result he desired.

After August 1942 the conflict that had raged between the Air Ministry and AOC Bomber Command over the formation of the Path Finder Force abated. As far as the Air Staff were concerned the Path Finder Force had become a *fait accompli*. Harris, for his part, now surreptitiously embarked upon his plan to establish a path finding force in each bomber Group. What developed was not a difference between himself and the Air Ministry, but a struggle between Bennett in what became 8 Group, and Harris's protégé, Cochrane, AOC 5 Group. Bennett claimed, with justification, that although he was personally supported by Harris, 8 Group too often took second place to 5 Group. The differences between Bennett and Cochrane are worthy of deeper study but not in this consideration of relationships between Harris and the Air Ministry.

During 1943 Bomber Command, under Harris's direction, continued its area offensive, very often in conflict with the current Directive. Efforts were made in some seven Directives issued in 1943 to divert Harris from his pre-determined path, often with little success, but never without an argument. At various times U-boat bases, German submarine construction yards and German fighter strength were all listed as priority targets. Harris viewed them as diversions. Instead, early

in 1943, Bomber Command was involved in what came to be called The Battle of the Ruhr. It was followed in the second half of the year by the Battle of Hamburg. Both battles created enormous damage and in the case of Hamburg, roused considerable concern among the German hierarchy. Speer, in a report to Hitler, warned that similar attacks on six more major German cities “would bring Germany’s armaments production to a total halt.”¹²¹ Bomber Command, however, lacked the capacity to bring armament production to an end through the destruction of German cities.

Nevertheless, had the destructive power possessed by the bomber force been used in precision attacks against selected elements of German industry — ball bearings, oil, electric power, and coal, are all good examples — then Germany’s war making potential might have been severely reduced. The long term plan for many in the Air Staff had been a return to precision attack once it became possible. Certainly by the end of 1943 the heavy bombers were available, they were equipped with the latest navigational and bombing aids, the Path Finder Force was refining its techniques and it was led by Bennett, who had declared his force’s readiness to attack precision targets with every prospect of success. Harris, however, continued to regard anything other than an attack on German cities as an unwarranted and undesirable diversion. The bomber war dragged on.

Then, in November 1943, Harris launched his bomber force against Berlin. It was a battle in which both the German capital and Bomber Command suffered severely. No victory was achieved and Bomber Command was forced to reconsider its options. By early 1944 it was clear to most of those in authority that bombing would not bring victory. A second front would be required. The Soviet Union had been promised one by both Churchill and Roosevelt, Eisenhower had been appointed Supreme Allied Commander, and *Pointblank* was being superseded by the bomber requirements for *Overlord*. The arguments that took place over that question will be considered in a later chapter.

By April 1944 it would not be unreasonable to expect that the controversy associated with the formation of the Path Finder Force would be nothing but a distant and best forgotten memory. The invasion of Europe was imminent and Bomber Command faced the challenge of precision attacks which Harris had said in January were beyond his force’s capability.¹²² Despite the many pressures in both the Air Staff and within Bomber Command Headquarters, it soon became

clear, unfortunately, that Harris's anger over the enforced establishment of the Path Finder Force had not abated.

In early April 1944 Portal and Harris, in discussing the transfer of three Path Finder squadrons to 5 Group, had for some reason referred to the establishment of the Path Finder Force in August 1942. Harris made claims with which Portal disagreed and Portal advised him that he would re-examine the relevant papers. After doing so, he advised Harris that he had looked up the correspondence and could find nothing to substantiate Harris's claim that the only opposition to the formation of the Path Finder Force was that it would be premature. "On reading your letter to Bufton on the 17th April, 1942, and his reply of the 8th May," Portal indicated, "I see no reason at all to modify my opinion as to where the credit lies for the Air Ministry share in what had been achieved. I hope that you will agree to have a talk some time with Bufton."¹²³

This letter apparently touched very raw nerves in Harris, for his peremptory reply commenced: "It has frequently been obvious to me that I am often unable to make myself either clear or even understood when discussing such matters with you."¹²⁴ Harris then went on to deny that he had either claimed or implied that the opposition in his Headquarters to the formation of the Path Finder Force was based solely on the grounds that it would be premature. He went further. He maintained that he had kept an open mind on the subject but that his Group Commanders and staff were totally opposed to the formation of a unit which, if Bufton's proposals were accepted, amounted to the establishment of a *corps d'élite*.

Harris then warmed to the task and launched a scathing attack on Bufton's methods. His ideas, asserted Harris,

are rammed down our throats whether we like them or not . . . more weight is given to his opinions as a junior officer 2 years out of the Command than to the considered opinion of the Commanders concerned on the spot and responsible for the outcome of events.¹²⁵

Despite the fact that he was the CAS and Harris a subordinate, Portal's reply, two days later, was the epitome of diplomacy. He pointed out that as Harris had claimed to like Bufton personally, commended his ability and honesty,

welcomed his suggestions, and accepted his criticisms, there was no reason for not improving the relationship between Bomber Command Headquarters and the Air Ministry.¹²⁶ He then proceeded to define Bufton's responsibilities and pointed out to Harris that Bufton was required to advise the CAS on matters relating to the supervision of Bomber Command's operations. Finally, Harris was politely advised that any decision reached by Portal, on the advice of a subordinate which conflicted with Harris's own opinion, should not be regarded as improper.

Harris responded on 18 April 1944 but his acceptance of Portal's definitions of Bufton's responsibilities was hedged with provisos. Bufton's trouble, Harris claimed,

has always been that he has, no doubt with good intentions, short circuited Command headquarters, thus giving the impression that his real aim was not so much to keep in touch with and assist the Command as to exercise detailed control over it from the Air Ministry.¹²⁷

At that point Portal apparently allowed the contretemps to lapse as he made no further reply.

Harris never gave up on his efforts to remould the Path Finder Force to the shape he desired. In November 1944, on learning that Portal was considering posting Cochrane (he became AOC-in-C, Transport Command in February 1945), he raised a vigorous protest. Cochrane, he claimed,

is in fact a genius. Therefore if he is taken away at this particular juncture or during the next three or four months, it is my honest opinion that it will be a serious factor towards postponing the conclusion of the European War. As I have always told you, I always hoped that Cochrane would replace me.¹²⁸

But Harris also had other concerns besides the removal of Cochrane. He reminded Portal that he

was about to suggest closing up 8 and 5 Groups into one super P.F.F. cum Main Force Group under Cochrane, and to ask for him to be promoted. I then thought that Bennett was going — a loss which could be easier borne because Cochrane has now acquired most of Bennett's outstanding technical knowledge and, apart from

that knowledge and his personal ability as an operational pilot, Bennett has serious shortcomings.¹²⁹

Bennett, of course, late in 1944 had advised Harris that he was going to stand for parliament in the forthcoming election but although they had exchanged several letters on when he would leave the Royal Air Force, no firm decision had been made. But what were the unidentified 'serious shortcomings' to which Harris had referred? Could it possibly be that Harris provided the answer in his own book? In a tribute to Bennett he acknowledged that Bennett's

consciousness of his own intellectual powers sometimes made him impatient with slower or differently constituted minds, so that some people found him difficult to work with. He could not suffer fools gladly, and by his own standards there were many fools.¹³⁰

With regard to the disagreements between Harris and the Air Staff relating to the formation of the Path Finder Force there is one outstanding, almost unique, feature. Portal, after receiving and evaluating the advice offered by Bufton and others, came to the decision that the Path Finder Force was an urgent requirement if Bomber Command was to operate efficiently. Harris's arguments were considered but finally rejected and, behind closed doors, Harris was informed (it cannot be said that he was ordered because what took place at their meeting has never been disclosed) that a Path Finder Force was to be established. Harris, clearly, because of his later actions, was upset by the instruction so it is possible that he had been given a direct order but the true situation remains obscure. Nevertheless, Portal had acted as the decision maker and brooked no further arguments from his subordinate. It was a display of competent and decisive leadership. Unfortunately, Portal provided very little follow-up and his apparent tacit agreement to Harris's pernicious erosion of the Path Finder Force, culminating in the removal of three squadrons in April 1944, suggests that either he was never fully in command, or that Harris had become too powerful a figure to be totally overborne.

In many histories of the bomber offensive that touch upon the establishment of the Path Finder Force there is one refrain, oft repeated. Harris, it is claimed, who had opposed the formation of the force on the terms offered, was determined once it had become a *fait accompli*, "to make it a success."¹³¹ John Terraine put

it somewhat differently. He argued that it was “the better side of Harris asserting itself once more; having bitterly opposed the setting up of the Force, now that it was decreed he was determined that it should have its rights.”¹³² Another author, Robin Neillands, in relation to the force, agreed with Terraine, declaring that “Harris was determined that everyone, including himself, should give it every chance of success.”¹³³ Anthony Verrier’s summation was that “Harris had seen the practical value of a special marking force to assist in the attainment of *his* objective.”¹³⁴ Rather than finding and marking precision targets, as desired by Bufton and others in the Air Staff, the Path Finder Force was largely employed in providing the spearhead for Harris’s area bombing programme. In his biography of Harris, Seward summarised his former Commander-in-Chief’s attitude towards the Path Finder Force as accepting it “with good grace.”¹³⁵

It appears in Seward’s case, however, he allowed his loyalty to Harris to overcome the *sine qua non* of historical accuracy for these opinions are, of course, totally contrary to Harris’s true aims as spelled out in the tapes that he made with Seward. That aim was a Path Finder Force in every Group. The Path Finder Force never received all the best crews and, with regard to the latest equipment, they were always simply another Group in competition with others, particularly 5 Group. The provision of Very High Frequency (VHF) radio for inter-aircraft communication to 5 Group before the Path Finders, provides a classic example. The struggle to be the first to receive new equipment becoming available thus became a competition between Cochrane and Bennett, encouraged by Harris, who readily acknowledged that both “were rather at daggers drawn which I didn’t discourage because it made both of them do their damndest.”¹³⁶ The final blow to the independence of the Path Finder Force was delivered in April 1944 when Harris transferred three squadrons from 8 Group (the Path Finder Group) to 5 Group. Ostensibly they were on loan but they were never returned. Harris had taken another step towards a Path Finder element in every Group.

Unfortunately the acrimony generated by the disagreements between Harris and Bufton persisted and seems to have seriously eroded Harris’s views of the motives behind other recommendations for improving the bomber offensive provided by members of the Directorate of Bomber Operations. At best he saw Directorate staff as trying to direct bomber operations without having to accept responsibility; at worst, as an enemy attempting to undermine his position for their

own advantage. Both Bottomley, the Deputy Chief of the Air Staff, and Baker, the Director of Bomber Operations, he accused of seeking his own position. Bufton, he claimed in one interview, was looking to be leader of the newly formed Path Finders.¹³⁷

Before closing this chapter it is necessary to acknowledge, despite his remoteness, severity, and apparent inability to accept advice, that Harris cared for his bomber crews and was aware of the dangers they faced. It also goes some way to explaining the passion he displayed in attempting to obtain promotion for crews transferring to the Path Finder Force. In 1943 after the attack on the German dams he visited Scampton and spoke to No. 57 Squadron and other invited crews. He told them how proud they should be that they were the only force taking the war to the enemy. He also issued a chilling warning. "I want you to look at the men on either side of you. In six months' time only one in three will be left, but if you are the lucky one I promise you this. You will be two ranks higher."¹³⁸ After a momentary pause the crews cheered. Harris paused as he was leaving, saluted, and departed without another word.

Finally, in any consideration of the formation of the Path Finder Force it is perhaps relevant to consider the views of one who was indirectly but heavily involved after its establishment – the Air Officer Commanding 5 Group, Sir Ralph Cochrane. In an interview with Saward for the Harris biography, Cochrane claimed that he knew Bufton well but, as the buffer between Portal and Harris, he believed that Bufton had been placed in an impossible position. There he was, Cochrane continued, with very sound ideas, trying to give advice to a senior whose plans "didn't seem to be going very well" but who rarely accepted decisions conflicting with his own, and certainly not when they came from junior officers. Fortunately, Cochrane concluded, Portal became involved. Portal's involvement, Cochrane affirmed, showed that the Air Ministry, as required, did "retain control."¹³⁹

Harris, as we will see, however, was not easily controlled, even by the Air Ministry.

- ¹ PRO AIR 20/4782, Bufton to Walker, 20 November 1941, pp. 1 and 2, paras. 1, 2, 3, 4 and 13.
- ² Ibid., Bufton to Walker, 11 March 1942, p. 1, para. 7.
- ³ Bufton Papers 3/18, Portal to Bufton, no date.
- ⁴ Webster and Frankland, Vol. IV, pp. 243/4, paras. 16 and 17.
- ⁵ Sir Arthur Harris, *Bomber Offensive*, (London, 1947), p. 73.
- ⁶ Robin Neillands, *The Bomber War*, (London, 2001), p. 108.
- ⁷ PRO AIR 14/3523, Harris to Bufton, 17 April 1942, para. 2.
- ⁸ Ibid., paras. 6 and 7.
- ⁹ Bufton Papers 3/31.
- ¹⁰ For a fuller account see R. J. Overy, 'From "Uralbomber" to "Amerikabomber" : the Luftwaffe and Strategic Bombing' in *Journal of Strategic Studies*. Vol. 1, 1978.
- ¹¹ Bailer, *The Shadow of the Bomber*.
- ¹² Alfred Price, *Instruments of Darkness*, (London, 1967), pp 19-23.
Coincidentally, it was Flight Lieutenant H. E. Bufton, a younger brother of Sydney Bufton, who was largely responsible for unlocking the secret of the German bombing beams. He enjoyed a distinguished career in the Royal Air Force and retired in 1961 as a Group Captain, DSO, OBE, DFC, AFC. For his work locating the German beams, see R. V. Jones, *Most Secret War*, (London, 1978), p.104. Also, Michael Cummings, *Beam Bombers*, (Stroud, 1998).
- ¹³ Kenneth Wakefield, *Pfadfinder*, (Stroud, 1999), p. 78.
- ¹⁴ Jones, *Most Secret War*, p.169.
- ¹⁵ Webster and Frankland, Vol. I, p. 419.
- ¹⁶ Bufton Papers 5/1, Cherwell to Churchill, September 1941. See also Webster and Frankland, Vol. 1, p. 419.
- ¹⁷ Portal Papers, 1942, File 9, 3A, Cherwell to Portal, 27 February 1942.
- ¹⁸ Tizard Papers, Portal to Tizard, 17 August 1941.
- ¹⁹ Bufton Papers, 3/10, *Night Bombing Policy*, 25 August 1941, p.4, para. 30.
- ²⁰ PRO AIR 14/516, 1 November 1941.
- ²¹ Ibid., Oxland to Peirse, p.2, para. 4.

- ²² Ibid., Baldwin to Peirse, p. 1, para. 1, 10 November 1941.
- ²³ Ibid., Carr to Peirse, p. 2, para. 7, 14 November 1941.
- ²⁴ Ibid., Slessor to Peirse, p. 1, para. 1, 6 November 1941. The responses provided by the group Commanders are interesting in that they were provided without outside pressures. They need to be compared with the answers by the same commanders when questioned by Harris in March 1942. See page 11 of this chapter.
- ²⁵ Slessor, *The Central Blue*, p. 371.
- ²⁶ Bufton Papers, 3/6, Bufton to Baker, 4 December 1941.
- ²⁷ PRO AIR 20/4782, *Suggestion for Improving Efficiency of Night Attack*, 5 November 1941.
- ²⁸ PRO AIR 2/3031, *Tactical Developments - Bomber Command*, 20 November 1941, p. 2, para. 13.
- ²⁹ PRO AIR 20/4782, *'Daylight Bombing' at Night*, 20 November 1941.
- ³⁰ PRO AIR 2/2031, *Increase of Striking Power by Application of Tactics*, 29 November 1941.
- ³¹ Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries*, (Harmondsworth, 1985), p. 245.
- ³² PRO AIR 20/788, Bufton to Baker, 27 February 1942.
- ³³ Ibid.
- ³⁴ PRO AIR 20/788, Baker to Bottomley, 27 February 1942.
- ³⁵ PRO AIR 8/625, Harris to Portal, 5 March 1942.
- ³⁶ Bufton Papers, 3/18, 3 March 1942. The letter to 3 Group was unsigned and no apparent action was taken.
- ³⁷ PRO AIR 14/3548, Harris to Oxland, 3 March 1942.
- ³⁸ Churchill's Minute, M.1038/1, 11 November 1941, addressed to both Sinclair and Portal was issued because of Churchill's concern at what he saw as unnecessary bomber losses. "There is no need" he wrote, "to fight the weather and the enemy at the same time." See Gilbert, *Finest Hour*, p.1232.
- ³⁹ PRO AIR 20/4782, Bufton to Baker, 11 March 1942.
- ⁴⁰ The first operational use of Gee was on the night of 8/9 March 1942 for an attack on Mannheim. See WF, Vol. I, p. 386. It had earlier been used, experimentally, on the night of 11/12 August 1941. See WF, Vol. I, p.382.

- ⁴¹ Bufton was in error regarding crew dilution. It would have been significant had the best crews been allotted to the force. Unfortunately that was not always the case.
- ⁴² PRO AIR 20/4782, Bufton to Baker, 11 March 1942.
- ⁴³ Bufton Papers, 5/13, Bufton to Martin Middlebrook, 7 April 1983.
- ⁴⁴ In October/November 1991 Anthony Furse conducted several long, taped interviews with Sydney Bufton. This item was recorded on Tape 2, Side B. Further references from the tape recordings will be identified by Bufton Tape with tape number and side. Also see Furse, Wilfrid Freeman, pp. 195-210.
- ⁴⁵ Bufton Tape, Tape 2, Side B. Paradoxically, in his own book, he was somewhat less supportive of the worth of a separate Path Finder Group. See Slessor, *The Central Blue*, p. 373.
- ⁴⁶ PRO AIR 20/4089, Bufton to Harris, 17 March 1942.
- ⁴⁷ Gee.
- ⁴⁸ PRO AIR 20/4809, Bufton to Harris, 17 March 1942, p. 3, para. 11(vii).
- ⁴⁹ Ibid., Paper from D of I (O) to Assistant Chief of the Air Staff (Intelligence), 6 April 1942, p. 1, para. 2.
- ⁵⁰ Ibid., p. 3, final para.
- ⁵¹ Tizard Papers, Cherwell to Prime Minister, *Estimation of Bombing Effect*, 30 March 1942. For full details of the exchanges between Cherwell, Portal, and Churchill, see Chapter Three.
- ⁵² See Chapter Three.
- ⁵³ Tizard Papers, HTT/969/9, Tizard to Sinclair, 15 April 1942. Also, HTT/167/1, Tizard to Cherwell, 15 April 1942.
- ⁵⁴ For both sides of this particular Tizard/Cherwell argument see Clark, *Tizard*, pp. 310-313. Also, Wilson, *Churchill and the Prof*, pp. 74-77.
- ⁵⁵ Webster and Frankland, Vol. I, Part III, Singleton Report, 20 May 1942, p. 337. The Singleton Report in full is available in PRO AIR 8/1015, 20 May 1942. For further details see Chapter 3.
- ⁵⁶ Ibid, vol. 1, p.338. Emphasis added in Webster and Frankland.
- ⁵⁷ PRO AIR 20/4809, Bottomley to Freeman, 8 April 1942.
- ⁵⁸ Furse, p.200.

- ⁵⁹ Bufton Papers, 3/18, undated, but obviously March 1942 as replies were received in April 1942.
- ⁶⁰ Ibid., undated. Underlining in the original.
- ⁶¹ Ibid., undated. Underlining in the original.
- ⁶² Bufton Papers, 3/20, Baldwin to SASO, 3 Group, 15 May 1942.
- ⁶³ Bufton Papers, 3/12, Bufton to Harris, 11 April 1942.
- ⁶⁴ PRO AIR 14/3523, Harris to Bufton, 17 April 1942.
- ⁶⁵ Ibid., p. 1, para. 5.
- ⁶⁶ Ibid., p. 2, para. 7.
- ⁶⁷ Bufton Papers, 3/31, Unsigned paper to ACAS(P), 16 May 1942. Similar figures were given in PRO AIR 8/688, *Summary of Bomber Command Reports on Raids on Germany since 1 March 1942*. Appendix A, No Date.
- ⁶⁸ Portal Papers, 1942, File 9, Enclosure 17, Portal to Harris, 21 April 1942.
- ⁶⁹ PRO AIR 14/3523, Bufton to Harris, 8 May 1942
- ⁷⁰ Ibid., p. 3.
- ⁷¹ Ibid., p.4.
- ⁷² PRO AIR 14/3523, Marwood-Elton to Saundby, 11 May 1942, para. 1.
- ⁷³ Ibid., para. 3.
- ⁷⁴ Ibid., para. 6.
- ⁷⁵ Ibid., p.1.
- ⁷⁶ Bufton Papers, 3/14, Air Staff Paper, *The Tactical Direction of the Bomber Forces*, 21 May 1942, p. 1, para. 5 (ii).
- ⁷⁷ Bufton Papers, 3/27, Harris to Freeman, 29 April 1942, p. 1, para. 3.
- ⁷⁸ Bufton Papers, 3/14, Air Staff Paper, *The Tactical Direction of the Bomber Forces*, 21 May 1942, p. 4, para. 14.
- ⁷⁹ Bufton Papers, 3/14, Freeman to Baker, 19 May 1942.
- ⁸⁰ PRO AIR 20/2795, Freeman to Harris, 3 June 1942, paras. 1 and 3.
- ⁸¹ PRO AIR 14/3548, Harris to Oxland, 22 May 1942. p. 2.
- ⁸² Webster and Frankland, Vol. 1, Part III, p. 425.

- ⁸³ PRO AIR 14/3548, Harris to Oxland, 22 May 1942, p. 3.
- ⁸⁴ PRO AIR 20/4809, *The Target Finding Force*, 25 May 1942.
- ⁸⁵ *Ibid.*, p. 5, para. 18.
- ⁸⁶ PRO AIR 20/3078, Ellwood to Commandant, undated.
- ⁸⁷ PRO AIR 20/3802, Bottomley to Freeman, 2 June 1942. Encl. 19.
- ⁸⁸ *Ibid.*, Freeman to Portal, 3 June 1942, Encl. 20
- ⁸⁹ Tizard Papers, File 355, Tizard to Bottomley. 6 June 1942, para. 1.
- ⁹⁰ PRO AIR 14/2058, *Minutes of Conference*, 10 June 1942.
- ⁹¹ *Ibid.*, para. 1.
- ⁹² *Ibid.*, para. 15.
- ⁹³ PRO AIR 8/688, Harris to Portal, 12 June 1942.
- ⁹⁴ *Ibid.*, para. 9.
- ⁹⁵ PRO AIR 2/7649, Portal to Harris, 14 June 1942.
- ⁹⁶ *Ibid.*, para. 2, Underlining in the original.
- ⁹⁷ *Ibid.*, para. 8, Underlining in the original.
- ⁹⁸ PRO AIR 2/7649, Portal to Harris, 14 June 1942.
- ⁹⁹ Portal Papers, Portal to Harris, File 9, 1942, 31a, 14 June 1942.
- ¹⁰⁰ PRO AIR 2/7649, Portal to Harris, 14 June 1942, para. 10.
- ¹⁰¹ PRO AIR 20/3078, Note to VCAS, initialled D A P, 15 June 1942.
- ¹⁰² Bufton Papers, 5/13, Bufton to Middlebrook, 7 April 1983. Bufton wrote many letters to his fiancée Miss Maureen (known as Susan) Browne during the war but only rarely were Service matters mentioned. With regard to the Path Finder Force he made an exception. He exulted, " WE HAVE WON !!!! Bert came to see the head man today, and he hadn't a leg to stand on. It's a shattering result and is rather like the battle in the last war which was required to set up the convoy system." Private correspondence, Bufton to Miss Browne, 15 June 1942. Bufton and Miss Browne were married on 1 January 1943.
- ¹⁰³ Embry had been Bufton's Flight Commander when Bufton was training as a flying instructor at the Central Flying School at Wittering in 1930. Air Chief Marshal Sir Basil Embry, GCB, CB, KBE, DSO and three Bars, DFC, had a spectacular career in

the RAF. In September 1939 he commanded No. 107 Squadron equipped with Bristol Blenheims. On 27 May 1940 he was shot down over France and, although picked up twice by German units, he managed to escape both times and returned to England after an absence of nine weeks and five days. During one escape some accounts assert that he killed a German sentry but other versions merely claim that the sentry was struck. In October 1940 he was posted to the Air Staff at Fighter Command HQ and, apart from a brief sojourn in HQ, Desert Air Force, remained mainly with night fighters until 27 May 1943. On that date he was appointed AOC, No. 2 Group, Bomber Command just three days before it became a Group of the Second Tactical Air Force under Air Marshal Arthur Coningham.

Embry's first impressions of No. 2 Group, as he explained in his own book *Mission Completed*, (London, 1957), was that it lacked a precise definition of its primary role.

The Group had suffered heavy losses and he sensed morale was low. Embry's assessment was that the major problem was that the Group and various station headquarter staffs were all too remote from the operational scene. His solution was to insist that operational experience was to be gained and vigorously maintained by all personnel in both command and staff appointments. It was a problem that dogged Bomber Command throughout the war and, at Harris's insistence, senior officers continued to be refused permission to fly on operations. In No. 2 Group, however, Embry made the rules and, as an Air Vice-Marshal, Group Commander, flew on nineteen missions masquerading as Wing Commander Smith.

Embry has been described by many as possessing courage, drive, tenacity, ingenuity, efficiency, resourcefulness and persistence — they are accolades well deserved. One question remains — why did Harris judge Embry as being unsuitable to become the leader of the Pathfinder Force?

¹⁰⁴ PRO AIR 20/3078, Portal to Freeman, 15 June 1942.

¹⁰⁵ PRO AIR 14/2058, *Formation of Path Finder Force*, 19 June 1942.

¹⁰⁶ Saward Interview, Tape 3, Side B, 1972.

¹⁰⁷ Ibid.

¹⁰⁸ Webster and Frankland, Vol. 1, p. 431, Note 2.

¹⁰⁹ Air Chief Marshal Sir A T Harris, *Despatch on War Operations 23rd February 1942 - 8th May 1945*, (London, October 1945), p. 11, para. 20.

¹¹⁰ Musgrove, *Pathfinder Force*, p. 7.

¹¹¹ Alan Bransom, *Master Airman*, (Shrewsbury, 1985), pp. 90-1. Other works in addition to Bennett's own biography are, A S Jackson, *Pathfinder Bennett*, (Lavenham, 1991) and John Maynard, *Bennett and the Pathfinders*, (London, 1996).

¹¹² PRO AIR 20/3078, Portal to Freeman, 15 June 1942.

¹¹³ PRO AIR 14/2058, Saundby to Harris, 19 June 1942.

¹¹⁴ PRO PREM 3/20/9, Harris to Churchill, 6 July 1942.

- ¹¹⁵ PRO AIR 8/688, Minutes, 8 July 1942.
- ¹¹⁶ PRO AIR 19/351, Kingsley Wood to Prime Minister, 11 July 1942.
- ¹¹⁷ PRO AIR 20/778, Bottomley to Portal, 21 July 1942.
- ¹¹⁸ Bufton Papers, 3/12, Bufton to Portal, 26 July 1942, para. 3.
- ¹¹⁹ PRO AIR 8/688, 28 July 1942.
- ¹²⁰ PRO AIR 20/3078, Bottomley to Harris, 11 August 1942.
- ¹²¹ Albert Speer, *Inside the Third Reich*, (London, 1971), p. 284.
- ¹²² PRO AIR 20/3223, Harris to Portal, 13 January 1944, p. 8, para. 22.
- ¹²³ Portal Papers, File 10, 1944, No. 15, Portal to Harris, 12 April 1944.
- ¹²⁴ Portal Papers, File 10, 1944, No. 15a, Harris to Portal, 14 April 1944.
- ¹²⁵ *Ibid.*, p. 2.
- ¹²⁶ Portal Papers, File 10, 1944, No. 15b, Portal to Harris, 16 April 1944.
- ¹²⁷ Portal Papers, File 10, 1944, 15c, Harris to Portal, 18 April 1944, p. 1, para. 2.
- ¹²⁸ Harris Papers, H83, 93, Harris to Portal, 18 November 1944, p. 1.
- ¹²⁹ *Ibid.*, p.2.
- ¹³⁰ Harris, *Bomber Offensive*, pp. 129-130.
- ¹³¹ Gordon Musgrove, *Pathfinder Force*, (London, 1976), p. 185.
- ¹³² John Terraine, *The Right of the Line*, (London, 1985), p. 501.
- ¹³³ Neillands, p. 126.
- ¹³⁴ Anthony Verrier, *The Bomber Offensive*, (London, 1968), p. 149. Emphasis in original.
- ¹³⁵ Saward, p. 153.
- ¹³⁶ Saward Interview, Tape 6, Side B, 1972.
- ¹³⁷ *Ibid.*, Tape 9, Side A.
- ¹³⁸ Henry Probert, *Bomber Harris*, (London, 2001), p. 199.
- ¹³⁹ Saward Interview, Tape 11, Side B, 1972.

Chapter Five

Schweinfurt and Ball Bearings

In his treatise *On War* Carl von Clausewitz defined courage as one of the first requirements of great commanders: not solely the physical courage required in battle but also the moral courage required by those in positions of ultimate responsibility.¹ Air Chief Marshal Sir Arthur Harris possessed both. Courage alone, however, does not fully define the qualities of great commanders: they also require an ability to reason objectively coupled with resolution. Unfortunately these latter two qualities in Harris's character had deteriorated, by 1943, into intolerant dogma. As far as he was concerned there was only one way to win the war and that was his way: by the continuation and extension of the area bombing of German cities. He was not prepared to accept the advice of his superiors in the Air Ministry while he totally ignored that offered by civilians in the Ministry of Economic Warfare (MEW).

Harris's aversion to the MEW is not readily explained. It was partially that targets recommended by the MEW normally required precision attack and that method was anathema to the bomber leader who had long determined that victory could only be achieved by increasingly heavy area attacks on Germany's cities. In his mind precision attacks demanded a diversion and diversions, in his eyes, possibly meant an unwarranted extension to the war. Certainly up to early 1944 Harris was inflexible in his opinion that Bomber Command did not possess the capability for effective precision attacks. But that alone is not the complete picture. As Webster and Frankland observed one of Harris's problems was that he confused "advice with interference" and when that advice was offered by civilians it was doubly unwelcome.

The MEW, a 1939 creation, was broadly based on the Industrial Intelligence Centre which itself had been established in 1931 as an additional intelligence source to supplement the understaffed Air Intelligence Department in the Air Ministry. The MEW's responsibility was the collation of industrial intelligence but when they began to suggest targets for Bomber Command to attack, Harris was not the only one to object. Air Ministry Intelligence also saw the selection of targets by the MEW as an intrusion into a domain for which they believed they

were responsible. They agreed that the MEW was best equipped to measure the effects of the bombing on the German economy but strongly argued that Air Ministry Intelligence was responsible for target selection, together with the weight of bombs required to achieve destruction. The Air Ministry Intelligence were prepared to admit that while the MEW was best equipped to measure the effects of the bombing on the German economy, physical bomb damage assessment was their prerogative.

The first major clash between Harris and the MEW was that which followed the ill-fated Lancaster daylight attack on the U-boat diesel engine factory in Augsburg in April 1942, examined in detail later in this chapter.

Harris also clashed with the MEW over the Dams Raid in May 1943 when he claimed that he had been advised that the destruction of the dams would bring Ruhr industry to a halt. However, the MEW was never optimistic over the dams raid as they had always argued that it was the Sorpe Dam that was critical and if it was not destroyed then only minimal damage would be created by the destruction of the Möhne. Unfortunately Bomber Command did not possess an air weapon capable of destroying the Sorpe.

It is thus clear that another reason for Harris's rejection of MEW advice was that he doubted its accuracy.

But nowhere is the dichotomous nature of Harris's character better displayed than in the problems that occurred between him and the Air Staff over the question of Schweinfurt and German ball bearings. The problems relating to Schweinfurt were basically made up of three different elements. Firstly, after his defeat over the Path Finder Force question, Harris had come to regard the Air Staff and the Directorate of Bomber Operations in particular, as opposition to be overcome. The latter, in regard to Schweinfurt, acted largely on the advice offered by civilians in the MEW, but civilian advisers, as far as Harris was concerned, were *personae non gratae*. Personalities thus played a prominent role in the on-going disagreements. Secondly, the bureaucracy for running the war, even by 1943, was still not a well-oiled or finely-tuned machine. Precision in many of the parts, including the written requirements issued to Harris in the form of Directives, was all too often lacking. On too many occasions Directives provided escape paths for Harris to evade what the Air Staff believed almost amounted to direct orders. Finally, the Air Staff had continually to remember that Harris had been accorded

tactical control of the bomber force and had thus been granted some freedom of action in target selection based on operational considerations. Increasingly, however, as the war progressed, when challenged by the Air Staff as to why a particular target had been attacked and not that nominated by the Air Staff, Harris's answers were found to be unsatisfactory. The disagreements between Harris and the Air Staff which began in 1942 over the Path Finder Force question, escalated in 1943 and 1944 over Schweinfurt and other precision targets relating to *Overlord*, and climaxed in 1945 over German oil.

Harris believed that area bombing provided the only way to victory. Precision bombing had been tried but had been seen to be a failure. Germany would be defeated, claimed Harris, by destroying its cities and so reducing the morale of its people, particularly the industrial workers, that they would no longer possess the will to continue the struggle. Enemy morale had become the primary target, along Trenchardian lines, with industrial destruction an ancillary by-product. Any suggestion that the bomber force was capable of destroying small targets was anathema to Harris. It was an attitude he steadfastly maintained until Bomber Command itself displayed its precision bombing capabilities during the pre-invasion bombing in early 1944. Yet, even that confirmation was not sufficient to cause Harris to deviate from his self-determined, area bombing path.

Contrariwise, several members of the Air Staff viewed the area bombing programme, decreed in the February 1942 Directive, as but one step to an ultimate return to the precision attack of selected targets considered crucial to the German war effort. Bufton was involved in the drafting of this Directive, and he also viewed it as an interim requirement prior to a return to the attack of precision targets, once bomber crews possessed the necessary skills and equipment. In a paper in November 1941 he defined a possible formula. His vision was the massed use of flares for target identification, replenished by each bombing aircraft, followed by incendiary equipped aircraft to provide a marked aiming point. He had argued that

The successful development of a system on these lines might have a far reaching effect on our planning and enable us to undertake effectively the complete destruction of vital factories, synthetic oil plants, and to attack at night such targets as the battleships at Brest, which at present we find ourselves incapable of doing.²

Schweinfurt was included in the February 1942 Directive as an alternative area target, outside Gee range.³ Harris was not easily convinced. Bomber Command would not deliver its first attack on this prime target until the night of 24/25 February 1944.

Perhaps the problems that developed between Harris and the Air Staff might never have done so had firm action been taken by Portal at the outset. Directives issued to Bomber Command, with considerable input from the Directorate of Bomber Operations (DBO), were virtually direct orders. The broad selection of a target system was the responsibility of the Air Staff after considering a wide spectrum of political, economic, military, and intelligence advice. But too many Directives offered widely varying options. The February 1942 Directive for example, offered choices between area, precision, and other targets considered operationally vulnerable. Harris had the tactical responsibility for organising and planning the wide ranging attacks nominated in the Directive. Many factors had to be taken into account in planning attacks, so Harris always had a plethora of valid reasons when questioned by the Air Staff as to why a particular target complex had not been bombed. A direct order could have been given to Harris, but when tactical considerations had to be borne in mind, it would have been a very unusual step.

The potentially critical position of the German ball bearing industry in the production of aircraft, tanks, and other machinery essential to the war effort, was no secret to British planners. Schweinfurt, they were from the first aware, was the main production centre, with others located at Stuttgart and Bad Constatt, and smaller ones in Leipzig, Berlin, and Elberfeld. Estimates of production from the four factories in Schweinfurt were as high as seventy per cent of the total German output and the complex was believed to employ 13,000 workers.⁴ On those figures it presented the classic industrial bottleneck target. It also offered another attraction. Schweinfurt was, as one paper put it, "an old world town and should burn well."⁵ Harris, soon after his arrival at Bomber Command, was made aware of the possibilities. Destroy Schweinfurt, so the argument ran, and the German war machine was halted in its tracks.

During March 1942, Baker, as Director of Bomber Operations, had discussed informally with Harris the question of Schweinfurt as a potential target.

His suggestions were somewhat coolly received. Baker then had the question re-examined by staff at the Ministry of Economic Warfare (MEW). They confirmed that it remained an extremely significant target. This time Baker put his thoughts on paper. In a note to Harris he argued,

I am quite sure, if it were tactically feasible, that it would be well worth the effort to give Schweinfurt the same sort of medicine as you gave Lübeck, particularly in the sense of the capital we could make out of it of giving assistance to the other two Services and, more especially, to Russia.⁶

Harris's reply was less than enthusiastic. It was his opinion that the figures quoted were a projection to 1942 based on pre-war statistics and did not take into account changes forced upon German industry by the early outbreak of war. He refused to accept that German industrialists would not have done everything to avoid such a potentially disastrous bottleneck. As a target Schweinfurt also presented tactical difficulties. It was a small town, he declared, with a population of 40,000⁷ and lacked suitable navigational lead-ins to the target factories. With regard to its inflammability, Harris believed that it did not compare with Lübeck, but he did agree that it appeared to be an important target. For that reason, he conceded, "I am keeping an open mind . . . and, given the right conditions, I might decide to burn the town and blast its factories."⁸

Although five supplementary Directives were issued to Harris between May and September 1942, none mentioned either Schweinfurt or ball bearings. They simply added to the targets listed in the original Directive issued on 14 February 1942. Ball bearings continued, however, to be of interest to staff in the DBO. Perhaps one reason was that, despite the dispersal efforts that had been made, they were acutely aware of the susceptibility to air attack of the same industry in the United Kingdom. Morley had made clear that, in regard to the supply of ball bearings in the United Kingdom, too many eggs had been put in too few baskets. Destruction of factories at Chelmsford and Newark could, wrote Morley, "reduce our engine output by 3,400 units per month for six months."⁹ His paper was passed to W. Hubbard, the ball bearing controller at the Ministry of Supply. His response was that it was essential that the factories be "adequately protected" and

he confirmed that in both England and Germany they presented “an attractive target.”¹⁰

The Directive inherited by Harris in February 1942 listed industrial targets for attack by Bomber Command both within and beyond effective Gee range. However, the final paragraph of the Directive had noted that, on occasions, the Command might be required to deliver diversionary attacks on targets of importance in the light of altered strategic developments. Submarine construction facilities were given as one example.¹¹

Early in April 1942, with shipping losses in the Atlantic reaching crisis proportions, Harris made the unilateral decision to attack a factory in Germany producing diesel engines for U-boats. He requested details of such towns from the Air Ministry and was provided with a list prepared by MEW on 8 January 1942¹² Low on that list for economic reasons, the MEW later explained, was Augsburg, in southern Germany.

No further discussions took place with either the Air Staff or the MEW but on 17 April Harris launched twelve Lancasters on a low level, daylight attack on the *Maschinenfabrik Augsburg-Nürnberg Aktiengesellschaft* (MAN) U-boat diesel engine factory, in Augsburg. The attack was delivered in failing light, eight aircraft bombed the factory but only five returned to their bases in England.¹³ The claims made at the de-briefing after the raid were modest and an official report merely claimed that “Although it is unlikely that production was completely stopped . . . there is no doubt that work must have been seriously delayed.”¹⁴

The repercussions in England were much more serious. Lord Selborne, the Minister responsible for the MEW, wrote to Churchill claiming that there were facts concerning the Augsburg attack which gave him cause for concern. U-boat diesel engine plants had been given a low priority for attack, he made clear, because in the opinion of his experts, they were not considered to be vulnerable. Moreover, the total building capacity in Germany and the occupied countries was such that, even had the MAN factory at Augsburg been totally destroyed, all requirements of the U-boat construction programme could still have been met.¹⁵

Selborne also had other concerns. The first was that the MEW had not been directly involved in target selection; the second, that there were more worthwhile and vulnerable targets, close to Augsburg, whose destruction would have been “far more disastrous to a far wider range of war production.”¹⁶ He provided

two examples in detail – the ball bearing works at Schweinfurt-am-Main and the Robert Bosch works at Stuttgart-Feuerbach, producers of injection pumps for aero-engines and a major producer of spark plugs.

Churchill forwarded Selborne's complaint to Portal with a note: "This seems to me very disquieting. It must be thrashed out . . . Surely there ought to be some well considered plan and effective liaison."¹⁷

In response Portal provided a strong defence of Harris's actions. Augsburg, he asserted, had been a tactical experiment with target value not the sole consideration. He also agreed that, on security grounds, it was probably best that neither the Air Ministry nor the MEW had been involved in prior discussions. Finally, he argued that target vulnerability was for the Air Staff and Bomber Command to decide – not the MEW.¹⁸ On the evidence available concerning the Augsburg operation it would appear that Portal's *post hoc* defence of Harris's action was a misjudgement. Harris had involved himself in strategic matters and of this fact he should have at least been reminded. Portal's support, on the other hand, provided confirmation for Harris that perhaps the Air Staff's reins were only loosely held. He was to run very freely because of that slackness.

On 30 April 1942 Baker, as instructed by Portal, passed Selborne's letter and Portal's response to Harris. A rider, provided by Portal, was that in future, information on targets not included in the Directive was to be obtained from the Directorate of Bomber Operations prior to their implementation "without prejudice to security."¹⁹

Harris's explanatory letter to Churchill merits close consideration. Firstly, he acknowledged the Prime Minister's oral warning of Selborne's concerns. Now that he had seen the correspondence, continued Harris, he was ready to reply. The intention of the Augsburg operation, he claimed, was to force "the enemy to retain and exercise in Northern France a major portion of his Fighter Force . . . to disabuse him of the idea that a mere defensive crust on the coast is enough."²⁰ The aim, Harris pointed out, was to force the Germans to spread their air and anti-aircraft defences, and thereby reduce concentrations in the Ruhr.

Another factor involved, continued Harris,

was to find entry for the Bombers in daylight at some point where the operations of Fighter Command could protect the Bombers while

they broke through the crust, in the foreknowledge that, further inland, they were unlikely to meet serious fighter opposition.²¹

It was a dangerous and mistaken perception, as the Americans would quickly learn when they attempted penetration of German airspace.

Somewhat surprisingly, Harris then admitted that only after answers to these questions had been found, was any consideration given to target selection. It would appear, therefore, that neither the Directives, nor a desire to assist in the Battle of the Atlantic, had played any part in target selection. It was the reverse of the norm. Target selection was based on many factors; including weather, operational requirements, the current Directive, and forces available. Augsburg, uniquely, was selected only after the route had been determined.

In selecting the target, Harris acknowledged that Schweinfurt had been considered. Unfortunately, he claimed, the chosen route meant that "Schweinfurt was out of range unless the aircraft returned thence due west across the Rhine. This, however, would have brought them, while still in too much daylight, right across the heaviest defences in Germany."²² If that had been the case, then surely it would have been a planning error. The time on target, which ever target was selected, should have meant that the aircraft returned in darkness. All that was required was an adjustment to the take-off time. In any event, the return from Augsburg was commenced in daylight, but whether that was caused by a mistake in planning, or confusion of civil, nautical and astronomical twilight, or being early on target, is now purely conjecture.

Finally, Harris particularly stressed the need of secrecy for the Augsburg operation. Without being specific, he protested:

I could not in any circumstance agree to discuss projected attacks outside my Headquarters with other Departments I am sure indeed that a continuation of that policy is the first essential of security.²³

Surely it was the same for every operation. Of course there never should have been idle discussion concerning possible targets. Security was vital. But to avoid discussion with those in possession of the facts, and who were regularly involved in target planning, meant that the crews on the Augsburg operation went inadequately prepared.²⁴

Despite the deficiencies and errors, Churchill declared himself completely satisfied with Harris's response, and suggested that Selborne and Harris meet for lunch.²⁵ Selborne, still unwilling to yield despite the somewhat shaky ground, wrote again to Churchill. He expressed surprise that Harris had been given the latitude to undertake an operation, outside his current Directive, without specific approval. Churchill, who clearly had had enough, responded tersely: "I see these officers every week. We often talk these things over together."²⁶

Unintentionally or not, the impression had been given that the relationship between Harris and Churchill was of a special nature. What is known is that henceforth advice provided by the MEW officials was treated by Harris with considerable suspicion. Crossing swords with such an unforgiving opponent as Harris, as others had learned, was unwise. The MEW, from this early date, had come to be regarded by him as another enemy. Post-war, Harris was to lament the number of occasions when he claimed he had been led up the garden path by MEW assertions that the destruction of a particular target or industry would provide enormous benefits. As an example during his long interviews with Saward, Harris quoted the notable Dambuster raid in May 1943 where, despite MEW pre-raid claims to the contrary, the results, he asserted, were "minimal."²⁷

Not for the first or last time during his long interview with Saward, Harris's memory was at fault. With regard to the Möhne Dam, Lawrence, the MEW official consulted prior to the attack, refused to confirm that its destruction would seriously affect water supplies to industries in the Ruhr. His recommendation was that the Sorpe was the vital target. The destruction of both the Sorpe and the Möhne Dams, he advised, "would be worth much more than twice the destruction of one."²⁸

Perhaps, however, Harris would have been somewhat less disparaging had the crews on the dams' raid been able to breach the Sorpe. It was known by Barnes Wallis that the weapon developed for the Möhne dam was unsuitable for the Sorpe because it had a solid concrete core covered by an earth and stone wall. The attack on the Sorpe was therefore to be parallel to the dam wall and not at right angles to it, and the bomb was to be released approximately twenty feet out from the rampart. The Sorpe was attacked by only one Lancaster, without success. After the war, Speer admitted that "if the Sorpe valley dam had been

destroyed instead of the Eder dam, Ruhr production would have suffered the heaviest possible blow.”²⁹

In May 1942, no further progress having been made over Schweinfurt, Harris, in a letter to Baker, confirmed his position by declaring that he was

no believer in these highly concentrated and vulnerable bottlenecks in the enemy's economy. We are always having them pointed out to us and, as in the case of oil, no sooner have we expended great effort in the destruction of his reserves than the experts begin to dispute and hedge and assert that it was not so important after all.³⁰

Harris then prophesied that with 1,000 bombers Germany would be knocked out of the war in six months. With 10,000 it would only take six weeks. He concluded, “In the meanwhile . . . let us keep to our correct and set tasks without paying too much attention to the bright idea merchants who surround us on every side.”³¹ This letter was simply further confirmation that Harris believed that the war would be won his way, without recourse to either official or expert guidance.

In November 1942 a further attempt was made by Baker to interest Harris in Schweinfurt as a suitable target. On instructions from Portal, Baker had again been in contact with the MEW for their opinion on the ball bearing situation in Germany. They confirmed that they still considered Schweinfurt to be a valid target. Ball bearings, they warned, held a central place in the industrial economy. The factories were concentrated and recovery from bomb damage would be a slow process. The destruction of the factories in Schweinfurt, asserted the MEW, “would result in a loss to the Germans of considerably more than half their requirements in ball bearings for their production of armaments.”³²

Although no supporting material has been located to confirm his belief, Baker was of the opinion that Harris had prepared a plan for an attack on Schweinfurt employing normal resources. Baker suggested that on the latest MEW assessment these plans should be revised. What was required, he believed, was an attack “on the heaviest scale and in the most effective manner as our total resources will permit at whatever the cost.”³³

Late in November 1942 a draft, unsigned, Air Staff Paper, 'Appreciation on Tactical Plan – Town of Schweinfurt and Associated Ball Bearing Factories,' was produced.³⁴ The aim, the paper declared, was “the complete destruction of the four ball bearing factories and the town of Schweinfurt and with the infliction of maximum casualties upon the skilled workers.”³⁵ The planned, daylight attack, was seen as a major war operation requiring the maximum concentration of British and American air power. The operation, the paper concluded,

should be conceived as one of the major battles of the war . . . We must be prepared to face heavy casualties. On night operations we are ready to lose up to 200 aircraft and crews per month: the complete success of this operation would warrant the cessation of night bombing for two months.³⁶

Was it meant that losses of up to 400 aircraft could be expected? The next statement was, perhaps, added as a tempering influence. With “meticulous planning” the paper continued, “there is no reason to expect unduly heavy casualties.”³⁷

Doubtless, the proposed long range, daylight penetration of German air space explains the potentially high casualty rate.³⁸ Had the Augsburg lesson been forgotten already? Precision attacks using high explosives were planned for the factories, while the town was to be subjected to an area attack employing a high percentage of incendiaries. The result, it was hoped, would provide a significant conflagration to act as a beacon for another attack on the same night employing OTU and Conversion Unit crews, supplemented by as many aircraft from Coastal Command as could carry a bomb load to the target area.

On 21 November 1942, the day following the presentation of this paper, Bottomley sent a Directive to Harris, couched in letter form, confirming the Air Staff requirement for an early and heavy attack on Schweinfurt. He included with his letter an enclosure prepared by the MEW entitled 'The European Ball-Bearing Position'. There was no ambiguity in his call. Because of the importance of ball bearings to the German war effort, plus the fact that a major portion of that industry was located in Schweinfurt, Harris was, in effect, ordered to reconsider his plans for a two-pronged, overwhelming attack on Schweinfurt and present them to the Air Ministry for their consideration. The aim, Bottomley confirmed, was “the

complete devastation of the factories and the town in one overwhelming operation.”³⁹ The Air Staff, however, were well aware that with the navigational and bombing equipment then available to Bomber Command Schweinfurt would not be an easy target. Nevertheless, its importance required that risks be taken and Harris had already shown, in the attack on Augsburg with two newly formed Lancaster squadrons, that he was prepared to chance his arm.

Harris’s reply was quickly forthcoming. He agreed that the town could be dealt with by a night attack, but protested that the factories would require either a low level night attack in good weather, or an attack in daylight. Precision attacks were essential to destroy the factories, and on those grounds crews under training could not be considered for the operation. If they were included, he asserted, casualties would rise without any significant increase in the number of bombs hitting the target.⁴⁰ His desire not to include OTU or Heavy Conversion Unit (HCU) crews may have stemmed from the replacement crew flow problems that had resulted from losses of instructors and training crews from those units in the 1,000 bomber raids on Cologne, Essen, and Bremen, in May and June 1942.

Next, Harris bolstered his case using the figures provided by MEW in the paper accompanying Bottomley’s Directive presented the previous day. This paper, he pointed out, claimed that “52% of the present ball-bearing supplies available to Germany are concentrated in the . . . factories . . . at Schweinfurt.”⁴¹ Later, in the same paper, it was stated that “the real load of armaments demand upon the ball-bearing industry is probably . . . in the region of 66%.”⁴² Thus, protested Harris,

the complete destruction of the SCHWEINFURT group of factories would not necessarily do more than reduce the production available for the armaments industry by more than a small percentage.⁴³

Any deficiencies, Harris argued, would quickly be made up from other factories throughout Europe, or by increased imports from Sweden.

By the employment of these arguments Harris, rather than concerning himself with the tactical problems centred on an attack on Schweinfurt, was now attempting to interfere in the strategic decision that had already been made by his seniors. The Air Staff had decided that a successful attack on Schweinfurt would provide invaluable returns. It was not Harris’s prerogative to question the possible

returns that such an attack would provide. His task was to decide that the task was a reasonable operation of war and have it carried out.

With regard to the losses possible on the operation envisaged, Harris made several pertinent points. The loss of 200 crews in a month of operations, he maintained, was only acceptable provided the percentage on any one squadron was not high because replacements were then gradual. Empty seats in the Officers' and Sergeants' Messes were a constant reminder to the aircrew of their own vulnerability so overnight losses were normally replaced immediately. With potential losses at the level mentioned, immediate replacement would be impossible and crew morale would decline steeply. In rejecting the suggested plan, Harris concluded:

I am of the opinion that the existing plan of attack, which I had hoped to make with my normal force shortly, is adequate and will achieve probably as much as the wholesale plan at a tithe of the cost.⁴⁴

Buften, asked by Bottomley to comment on Harris's reply, took issue first with Harris over the use of crews from the OTUs. He agreed that they would not be suitable for the precision attack on the factories but suggested that they could be of use in the area attack on the town. Buften also rejected Harris's plan for a low level night attack saying that *flak* would render it costly and ineffective, reiterating instead, the call for an attack by day. It is in this argument that it is possible to identify Buften's hand in the original Air Staff paper.

Weather, Buften agreed, could create difficulties for an attack scheduled to commence in daylight and be taken up the same night. But, he argued, Bomber Command had to be prepared to exploit every opportunity offered rather than take avoiding action. An attack on the normal scale, suggested by Harris, guaranteed nothing, affirmed Buften. It was his opinion that Schweinfurt called for an attack mounted by the combined bomber strength of Bomber Command and the United States Eighth Air Force. Harris's opposition, Buften declared, was tantamount to

overriding the Air Staff decision to treat this project as a single major operation, and would relegate it to the status of normal night operations. All experience shows that this would not result in the achievement of the aim.⁴⁵

Baker, however, was not entirely satisfied with Bufton's draft. Firstly, he wanted greater emphasis placed on the importance of the planned attack and a better understanding of the possible losses. Although figures of up to 200 aircraft had been mentioned, this was simply, he pointed out, to underline the vital nature of the target. If tactical surprise was achieved, unduly heavy casualties would not necessarily be sustained. Secondly, Baker wanted to reinforce the call for the attack to be carried out in daylight. This would provide conditions that should allow total destruction to be completed in a single operation. Thirdly, Baker toned down Bufton's claim that Harris appeared to be "over-riding the Air Staff decision." Baker agreed with Bufton that, despite his letter, Harris should be asked "to submit a plan for the operation on the scale and on the lines proposed in conjunction with the Commanding General Eighth Air Force."⁴⁶

In January 1943 Churchill, Roosevelt, and their chiefs of staff met in Casablanca. By this time it had become clear that Germany had lost the initiative. Defeats at Stalingrad and El Alamein, and with Anglo-American forces having landed in North Africa, meant that the German Army was on the defensive. Re-entry to the Continent, long a dream of the British Chiefs of Staff, had become a possibility. Where previously air power alone appeared to offer the way to victory, now other vistas could be identified. Air power had now become just one, and not the only way to bring about the defeat of Germany. Portal, at a preliminary meeting, agreed. He proposed that it was now necessary to apply "the maximum pressure on Germany by land operations; air bombardment alone, was not sufficient."⁴⁷ Discussions at Casablanca thus centred on the best means of providing assistance to Russia, extending operations in the Mediterranean, and increasing the bombing pressure on German industries and people.

On 4 February 1943 Harris and Brigadier General Ira Eaker, the American commanding the VIII (American) Bomber Command of the United States Army Air Force (USAAF), received a new Directive from Bottomley dated 21 January 1943.⁴⁸ It became known as the *Casablanca* Directive. The preamble defined the role of the two Air Forces as

the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale

of the German people to a point where their capacity for armed resistance is fatally weakened.⁴⁹

The targets were then listed in their order of priority as German submarine construction yards, the German aircraft industry, transportation, oil plants, and other targets in the enemy war industry. Yet wide-ranging as this list was, the Directive continued with further objectives described as being of great importance. These were German submarine bases on the French Atlantic coast, Berlin, industrial targets in northern Italy, enemy morale, and the German day fighter forces.

The Directive was welcomed by Harris. In a letter to Portal on 6 March 1943 he expressed his pleasure that the Air Ministry had categorically stated that

the primary objective of Bomber Command will be the progressive destruction and dislocation of the German military, industrial and economic system aimed at undermining the morale of the German people to a point where their capacity for armed resistance is fatally weakened.⁵⁰

His alterations were subtle but extremely significant. By converting the phrase “your primary objective” in the Directive, which referred to both Air Forces, to “the primary objective of Bomber Command,” Harris assumed responsibility for the continuation of the attack on morale by means of his area attack programme. By inference, the United States bomber force was responsible for the specific target systems listed in the Directive. The Air Staff made no comment.

Because the specific roles of the two Air Forces thus remained largely undefined, the bomber offensive of 1943, instead of being combined, became rather more a bombing competition. One historian, Noble Frankland, maintained that

The conflict in 1943 had the appearance of being between Sir Arthur Harris and the British Air Staff, but it was really a conflict between the R.A.F. Bomber Command and the U. S. Eighth Bomber Command.⁵¹

Frankland may well be correct. Nevertheless, it was a conflict that could and should have been terminated immediately by the Air Staff exerting the authority

which they possessed. The fact that that authority was never enforced does not reflect well on Portal in particular.

Portal, under the terms agreed by the Combined Chiefs of Staff at Casablanca, had been accorded the authority to provide the strategical direction of both RAF Bomber Command and the US Heavy Bombardment Units based in the United Kingdom and both Churchill and Roosevelt had been so advised. The tactical direction, including the techniques and methods to be employed, remained the province of the respective commanding authorities, Harris and Eaker. Portal was thus meant to be the master hand guiding the Strategic Bombing Offensive. Unfortunately, by permitting on several occasions the tactical decisions of Harris and Eaker to supersede his strategic desires, Portal allowed himself to become subordinated.

The *Casablanca* Directive was accompanied by a paper from the MEW which detailed the priorities for air attack among the selected industrial targets.⁵² The primary aim, it stated, was to apply the maximum interference with the supply of weapons and equipment to the German armed forces. According to this paper the production of aircraft, guns and ammunition, tanks, submarines, and transport, required a military and not an economic appreciation. However, the paper claimed, it was the economic and tactical considerations which identified to what extent and the way in which any particular production system could be affected by air attack.⁵³ The most productive targets, the paper concluded, were those factories manufacturing components and heading this list were ball bearings.⁵⁴

Staff in the Directorate of Bomber Operations were not slow in expressing their concern at the amount of freedom granted Harris in the matter of target selection within the terms of the new Directive. Morley was one who made written comment. His belief was that limitations to effective bombing imposed by the diminutive force available, its tactical efficiency, and the European weather conditions, required that attacks be concentrated. Lack of concentration meant wasted effort. His argument was that the target list provided was too general in nature. For the offensive to be successful, Morley suggested, “[it] must be concentrated against the minimum number of primary enemy objectives.”⁵⁵ Ball bearings, he continued, provide the “outstanding example of a true economic bottleneck.”⁵⁶ Morley warned that the necessity to press home attacks might well mean heavy losses, but claimed that the results achieved would more than justify

the casualties. Morley also pointed out that if Schweinfurt was to be attacked at night, then the matter was urgent before the limited hours of darkness prevented penetration into southern or central Germany.⁵⁷

On 23 May 1943 Bufton, who had, on 10 March been appointed the Director of Bomber Operations, *vice* Air Commodore Baker, renewed the calls for an attack on Schweinfurt.⁵⁸ He reminded Bottomley of earlier correspondence emphasising the importance of the target and the urgent need for “one overwhelming day and night operation by British and American heavy bomber forces.”⁵⁹ In order to emphasise the importance of Schweinfurt, Bufton also pointed out that a preliminary report from the American Enemy Objectives’ Unit (EOU), on 7 May, had indicated that by both distribution and weight the ball and roller engine bearings salvaged from crashed German aircraft between 1939 and 1942 had been produced at either the three factories at Schweinfurt or one factory at Stuttgart.⁶⁰ He requested that, subject to weather, every effort be made by Bomber Command to launch a night attack on the Schweinfurt facilities as an immediate follow-up to the proposed daylight raid by the Eighth American Air Force. Morley, who had recently visited Bomber Command Headquarters and had discussed with Saundby the possibilities of such raid, reported that the Deputy Commander-in-Chief had been most impressed with the idea. Saundby suggested that Harris might also now look favourably on the operation.⁶¹ There was nothing new in this proposal. Indeed, the same facts had been presented on at least six previous occasions – all to no avail.

Once again the Air Staff’s appeals generated little enthusiasm at Bomber Command. Harris merely noted that he would not have talks with the Eighth Air Force until nearer the July moon period when there would be sufficient darkness for a successful night operation. Bufton, however, was now working with a joint American/British team to implement the Casablanca Directive, and through his connections there, with Colonel Charles P Cabell and Major Richard D’O Hughes,⁶² he learned that an American attack on Schweinfurt was being considered for the “immediate future.”⁶³ Bufton, in a note to Bottomley, contended that it was imperative that Bomber Command participated in the planned attack with Mosquito aircraft at the very least.⁶⁴ Absolutely nothing happened.

According to Douhet, target selection “and determining the order in which they are to be destroyed is the most difficult and delicate task in aerial warfare.”⁶⁵

Once that selection has been made, he continued, it then simply becomes a matter of proceeding with their destruction as rapidly as possible without distracting diversions.⁶⁶ On 10 June 1943 the Allied bomber force commanders, Harris and Eaker, received a new Directive. In essence it was a repeat of the earlier *Casablanca* Directive but with two exceptions. Target lists had been modified to take into account the increased threats posed by the *Luftwaffe* fighter forces, and the responsibilities of the respective bomber forces had been more closely defined. This revised Combined Bomber Offensive (CBO) plan provided for rapier-like, day-time thrusts by the Eighth American Air Force against selected precision targets, complemented by bludgeon-like blows to be delivered by Bomber Command in night area attacks against the same targets.

This new order, which came to be known as the *Pointblank* Directive, had passed through several stages. It was first discussed in Washington in May 1943, where it had been presented by the Combined Chiefs of Staff and received the approval of both Churchill and Roosevelt. Next, on 3 June 1943, it appeared as a draft Directive for the bomber commanders before reappearing, in final form, one week later. Its final form was the work of an unnamed committee with input from both American and British sources. Bufton and Morley from the Directorate of Bomber Operations were both directly involved, by invitation, in its preparation.⁶⁷ While German fighter strength was first priority on the target list, ball bearings were defined as one of four primary objectives. Particular emphasis had been placed on ball bearings in the early draft version but the sentence was omitted from the actual Directive.

Like earlier Directives, the *Pointblank* Directive lacked precision and clarity. The use of such terms as 'primary objective', 'priority objective', 'intermediate objective', and 'secondary objective' – all without adequate definition – were invaluable let-outs when disagreements arose later concerning target priorities. The Air Staff, well aware that Harris was ever prepared to take advantage of loopholes in Directives, must therefore bear a measure of responsibility for providing further opportunities for Harris to transgress. He rarely required any second chance.

Unfortunately the *Pointblank* Directive could not be fully implemented in June 1943 as the Eighth Air Force was still in the building process. It had been decided that deep penetration of Germany required a force of not less than 300

bombers. To deploy that number required a total of 800 bombers on first line strength. But by 30 June 1943, when 944 bombers should have been available, only 741 had arrived. Projections for September 1943 envisaged 1,192 bombers but, with revised estimates, it appeared likely that only 850 might have arrived.⁶⁸

Meanwhile the bomber war continued. On 15 July 1943 Bufton, having learned that the Eighth Air Force was planning an attack against Schweinfurt on the first suitable opportunity after 17 July, wrote again to Bottomley. His concern was that "Bomber Command may not co-operate as we would like them to if the operation is stages [sic] in the near future."⁶⁹ He asked that either Bottomley or Portal impress upon Harris the importance of Schweinfurt and the need for the planned operation to be as decisive as was possible.

On 25 July 1943 Bottomley alerted Harris that the Eighth Air Force Schweinfurt operation was now imminent.⁷⁰ He reminded Harris of the far reaching effects to be obtained from a successful operation and provided a note, prepared by Morley with input from the MEW, which he believed might be of value in crew briefings. Bottomley also sent a copy of this letter to Eaker.

If it had been the hope that operations conducted by Bomber Command and the Eighth American Air Force would, under the terms of both the *Casablanca* and *Pointblank* Directives, become more closely integrated, then, with regard to the first attack against Schweinfurt, they were to be bitterly disappointed. On 17 August 1943 the Americans launched a two-pronged attack against Schweinfurt and the aircraft plants at Regensburg and suffered heavy losses. There was no follow-up by Bomber Command. The reason given for their non-participation, the validity of which could not be denied, was that the raid took place at the time of full moon. Perhaps another equally valid reason was the shortness of the August summer nights. This particular Schweinfurt attack could not be cited as a good example of an integrated strategic air offensive.

Upon receipt of the MEW report on the effects of this raid, Bufton wrote to Air Vice-Marshal Sir Alec Coryton who, on 16 August, had replaced Bottomley as the Assistant Chief of the Air Staff (Operations). This letter was to remind Coryton of the importance that both the Air Staff and the Directorate of Bomber Operations still attached to Schweinfurt. Harris was understood to still be considering an attack on Schweinfurt and Bufton wanted to ensure that he was given every encouragement. Bufton took the improvement in the defences at Schweinfurt as

indicative of the importance the Germans placed on the ball bearing industry. In August 1942 there had been only a few light gun batteries. One year later there were forty-four heavy guns, fifty-seven light guns, forty-nine searchlights, three decoys, and an extensive system of smoke screen generators.⁷¹

On 14 October 1943 Schweinfurt was again the target for American bombers. This attack was more successful than the first but again they suffered crippling losses. Harris and Bomber Command again abstained. Bufton, aware of the criticism that might be directed at the Americans over the heavy losses unless the results were shown to be significant, intimated to Coryton that a congratulatory note be sent to the Eighth Air Force. It would, he suggested, "be most timely. It should congratulate the crews . . . and at the same time assure them that the importance of the objective was such that their heavy casualties were amply justified."⁷²

On 30 November 1943 Bufton, in a further letter to Coryton, re-emphasised the importance of Schweinfurt as a target calling for Bomber Command's attention. Following their heavy losses in two attacks on Schweinfurt, the Americans had shown reluctance to risk their bombers further, at least until such time as long range fighters were available for escort duties. Harris had displayed even greater reluctance, but his excuse was that he considered the target as a panacea. He provided other reasons, usually centred on the tactical difficulties that Schweinfurt presented. Bufton, having been assured by Bennett, the Path Finder Force leader, that Schweinfurt would present no great difficulty, confirmed that he believed that Harris tended "to exaggerate the difficulties of finding Schweinfurt at night,"⁷³ In concluding this letter Bufton confessed that he doubted that further letters "to Bomber Command would serve any useful purpose."⁷⁴ He indicated to Coryton that Bottomley should attempt personally "to try to persuade the C-in-C to take it on at as early a date as weather conditions allow."⁷⁵

By November 1943 the Path Finder Force had, despite Harris's non-cooperation, become a sophisticated force. It possessed the capability of finding and marking small, distant targets at night and even in ten-tenth cloud conditions could position sky markers for effective bombing of area targets. With his Lancasters now equipped with H₂S Bennett was more than ready to accept the challenge offered by Schweinfurt. But Harris was preparing for his last throw of the dice to win the war his way and thereby show the experts how wrong they

were. Berlin, not Schweinfurt, was his preference and it would prove a costly mistake.

It was clear, following the Quebec Conference in August 1943, that Portal had abandoned the notion that bombing would win the war. He now saw Bomber Command's contribution as reducing the capacity of German industry and its armed forces to a point where an Allied invasion of Europe could neither be repelled nor defeated. Harris, on the other hand, still argued that the war could be won through the intensification of the area bombing programme. His paper to Churchill in November 1943, preceding the 'Battle of Berlin', claimed that with American support in that action the war could be won. "We can wreck Berlin from end to end" he claimed, "if the U.S.A.A.F. will come in on it. It will cost between us 400 - 500 aircraft. It will cost Germany the war."⁷⁶

This particular letter from Harris to Churchill is significant because of the regret expressed by Harris at the failure of the American authorities to fall into line with Bomber Command's plans. With regard to the attack on Berlin, Harris rued, "I await promised U.S.A.A.F. help in this the greatest of air battles. But I would not propose to wait for ever, or for long, if opportunity serves."⁷⁷ Later, he wrote,

we must get the U.S.A.A.F. to wade in in greater force. If they will only get going according to plan and avoid . . . disastrous diversions . . . we can get through with it very quickly.⁷⁸

It would appear from this letter that Harris saw victory as being achieved only through the extension of his area attack programme. The plans prepared by the Combined Chiefs of Staff, approved by Churchill and Roosevelt and his own Commander-in-Chief, were, apparently, of little relevance.

By December 1943 it was becoming clear to the Air Staff that the continuing disputes with Harris over their call for an attack on Schweinfurt were in reality disagreements relating to fundamental questions of bombing policy. Early that month Harris submitted a progress report on the achievements of his Command. It specified the acreage destroyed for each ton of bombs released compared with the acreage attacked. These figures were then projected ahead to 1 April 1944 and data extrapolated for the damage to be expected in built-up areas in thirty-eight of Germany's main centres of population. It was Harris's claim that if sufficient damage – he calculated between forty and fifty per cent – could be

created in the principal German cities, capitulation would follow.⁷⁹ No account was taken of complementary damage to German industry.

Harris's review of the 1943 bomber offensive was passed to Bufton for comments. In the meantime, on 17 December 1943, Bottomley had made another effort to impress on Harris the importance that the Air Staff and others (including the Secretary of State for Air), attached to the bombing of Schweinfurt. Its wholesale destruction, reasoned Bottomley,

is not something affecting the enemy's long term condition; he is in such straitened circumstances already as a result of our attacks, that it will have a far more immediate effect than we had hoped for in the past.⁸⁰

Considering the importance that the Air Staff had placed on Schweinfurt over an extended period, together with the knowledge that Bomber Command had attempted nothing directly, Bottomley's concluding remarks can only be described as insipid:

We are, therefore, all hoping that you will be able to reach out to Schweinfurt at the earliest opportunity and that the development of the P.F.F. technique and equipment will enable you to make a really good job of it.⁸¹

The plea, for it can only be regarded as such, fell far short of being a clarion call for action.

Harris's reply was explicit. He made clear that he did not regard a night attack on Schweinfurt "as a reasonable operation of war."⁸² He cited several reasons. He argued that it was a small, heavily defended target, and would probably require several attacks to secure a satisfactory result. He then got onto his favourite hobby horse relating to the question of 'panacea' targets. He refuted figures of ball bearing production at Schweinfurt protesting that they had "always been exaggerated At this stage of the war I am confident that the Germans have long ago made every possible effort to disperse so vital a production."⁸³

His conclusion was succinct. If the target was important then he believed it was a task for the Eighth Air Force during the day. "If they can set the place alight in daylight," he ended, "then we may have some reasonable chance of hitting it in the dark on the same night. Otherwise, I am not prepared to take it on."⁸⁴

In the meantime, Bufton had prepared, for Bottomley's consumption, his critique of Harris's 1943 report. The main concern expressed related to Harris's aim of creating maximum destruction of built-up areas per ton of bombs released. The implication was the continuation of area attacks. As such, Bufton asserted, it was "a policy entirely divorced from that underlying the Combined Bomber Offensive Plan."⁸⁵ Because there had been a time lag in the build-up of the American heavy bomber forces, doubts were arising as to whether or not they could complete their defined tasks. To assist the Americans, Bufton concluded, Bomber Command should attempt to destroy

those plants which present the Americans, in view of the penetration involved, with their greatest tactical problems . . . this is a major issue upon which the Air Staff should extract from the C-in-C, Bomber Command a clear statement as to his intentions.⁸⁶

Bufton supplied a draft reply for Bottomley and his major criticism was repeated almost word for word in Bottomley's response to Harris on 23 December 1943. "Your proposals" Bufton asserted, and Bottomley copied,

imply a continuation of area attack upon the largest and most densely populated centres, for this is clearly the method by which the greatest return in terms of acres destroyed for tons dropped is to be expected. The attack of small centres of population which nevertheless contain vital industries, e. g. ball-bearing or fighter assembly plants, would, in terms of the policy implied in your Paper, prove uneconomical targets. It is, however, a major principle of Air Staff policy that your efforts should, as far as practicable, be co-ordinated with and be complementary to those of the Eighth Air Force.⁸⁷

Harris's reply to this further call from Bottomley was addressed to the Under Secretary of State but gave no indication that he was prepared to yield to pressure, even that exerted by his superiors in the Air Ministry. In his opinion, German economic life would be more disadvantaged by the destruction of workers' housing in the larger cities than by attempting precision attacks on small factories in isolated towns. He stressed that preparations for *Overlord*⁸⁸ would be assisted more by the destruction of one-third of Berlin than by the ruination of Schweinfurt. He also took issue with the phrase, used in the *Pointblank* Directive and repeated by Bottomley, concerning Bomber Command's activities as being

“complementary to those of the Eighth Air Force.” “I cannot understand the process of reasoning” he growled, “by which the 134,000 tons which Bomber Command has dropped on Germany in 1943 in connection with ‘Pointblank’ can be regarded as subsidiary to the 16,000 tons dropped by the Americans.”⁸⁹

By December 1943 the question of Schweinfurt was reaching crisis point. Bufton, in an effort to bring the trial of strength to a conclusion, made yet another effort. He enlisted the aid of Oliver Lawrence, the head of the Objectives Department in the MEW. Admitting that Schweinfurt was not an easy target, and acknowledging that its destruction might possibly prove expensive in both effort and casualties, he asked Lawrence to provide irrefutable evidence of the vital importance of the Schweinfurt factories in relation to German fighter production.

Lawrence was also asked to give an indication of the time interval to be expected, after the destruction of the factories, before fighter and other armament production would be affected. Bufton was well aware that Harris placed little value in assessments provided by the MEW, so he suggested in his letter that supporting opinions of American, Swedish and Swiss economic experts be obtained as further confirmation. After stressing the urgency of the matter, he asked Lawrence to provide a “summary of evidence”⁹⁰ at the earliest possible moment.

In addition, Lawrence was also asked to provide an MEW opinion on the possible effects on German morale, and their economic and social structure, of further extensions to the area bombing programme. Some, Bufton pointed out, have suggested it might bring about capitulation “if destruction was increased to between 40 and 50% of the fully built up zones of the principal German towns.”⁹¹ The Air Staff, however, he continued, remain unconvinced, but would appreciate MEW’s opinion.

Lawrence’s response was received at the Air Ministry within a fortnight. His recommendation, supported by the MEW and the Economic Warfare Division of the United States Embassy, was that the ball bearing factories at Schweinfurt, Steyr and Canstatt, together with the town of Schweinfurt, should be accorded the highest priority for attacks by the strongest possible bomber forces. Bottomley, in a letter to Portal on 12 January 1944, reminded the CAS of Harris’s disagreement over both the bombing policy he was required to pursue, and the foundations on which it was based. The matter is urgent, asserted Bottomley, and further

arguments with Harris would be a waste of time. Despite his personal antagonism, Harris must conform. In Bottomley's opinion, if Harris continued to disagree and the Air Staff failed to act, then it was an admission by the Air Staff that precision bombing by night or day of specific targets was totally ineffective. A new plan would be required.

Bottomley's role in the Air Ministry decision making process was, of course, crucial. As ACAS (Ops.), (until 15 August 1943 after which he became DCAS) he was largely responsible for the day to day aspects of Portal's work. He was both a Staff Officer and leader, receptive to ideas, and prepared to put them into action. He chaired the regular morning conferences at the Air Ministry with Heads of Departments and their Deputies, and all were aware that valid points raised would receive attention. He worked closely with the Directorate of Bomber Operations and displayed great skill in having contending parties reach agreement. According to Bufton, one officer vowed that Bottomley "plays the Air Ministry organ in a way it has never been played before."⁹² Robin Neillands, in *The Bomber War*, declared that there were many valid reasons to relieve Harris as AOC, Bomber Command, late in the war, and he nominated Bottomley as one of a small group of possible successors.⁹³

Bottomley agreed that the tactical reasons advanced by Harris for not having bombed Schweinfurt were hard to refute. He also believed that if Harris could come to accept that the ball bearing factories were worthwhile targets, they would be destroyed, if necessary, by a series of attacks. Many raids had been attempted on targets of much less importance than Schweinfurt and failures were not unknown. Provided Harris could set his mind to the task, then Bottomley thought the object was achievable. In closing this letter Bottomley was quite blunt. "I now suggest" he concluded,

we specifically direct the C-in-C to attack Schweinfurt in force on the first opportunity when he is satisfied that weather conditions are favourable and to continue to attack it as opportunity allows, until it is destroyed or until alternative directions are issued.⁹⁴

Bomber Command, during 1943, had passed through an eventful period. No one, certainly not among the Air Staff, made any attempt to deny Harris the successes that had been achieved. The force had grown significantly during the

year, particularly in the bomb carrying capacity, with increasing numbers of heavy bombers becoming available. While Stirlings with their altitude limitations and Halifaxes with both altitude and mechanical problems continued to cause concern, Lancasters were more than proving their worth. At the same time, both navigation and bombing equipments were becoming more sophisticated.

Oboe, the precise bombing or target marking system, was first employed in December 1942. The system was reliant upon ground based stations but was extremely accurate out to about 350 miles. It could only be used by one aircraft at a time but had proved its accuracy on short range targets in Western Europe. The self-contained, ground mapping radar, H2S, introduced in January 1943, provided both navigational and bombing information, without ground assistance and with no restriction on range. In the hands of an experienced operator it was invaluable. Unfortunately it also had the disadvantage that its transmissions enabled German fighters equipped with *Naxos*⁹⁵ to home on the transmitting bomber. To achieve the best results with H2S it was desirable that transmissions be continuous, but the knowledge that by using ground mapping equipment they were revealing themselves provided a vast disincentive for RAF bomber crews.

The composition of heavy bomber crews also changed about July 1942. Where previously observers had been responsible for both navigation and bombing, the responsibilities were now divided, with the navigator solely responsible for navigation while the air bomber was expected to assist the navigator, operate the radar equipment, and carry out the actual bombing.

Despite the advances made and the successes achieved in the so-called Battle of the Ruhr between March and July 1943, the devastation in Hamburg in July and August 1943, the one-off success at Peenemünde also in August 1943, together with the increasing guidance provided by the Path Finder Force, Harris continued to view his force as being best equipped for area attack. He persistently denied that it also possessed the capability of precision attacks on small targets.

Although confirmation was hardly necessary, Harris, early in January 1944, provided further evidence that he was prepared to stand firm in his self-determined programme of area bombing. “‘OVERLORD’” he remarked as the opening to a lengthy paper,

must now presumably be regarded as an inescapable commitment and it is therefore necessary to consider the method by which our most powerful weapon, the heavy bomber force, can be brought to bear most effectively in support of it.⁹⁶

His conclusion was that the “best and indeed only efficient support which Bomber Command can give to OVERLORD is the intensification of attacks on suitable industrial centres in Germany.” Any attempt to vary this programme and attack precision targets such as gun emplacements or communications would be an “irremediable error of diverting our best weapons from the military function for which it had been equipped and trained to tasks which it cannot carry out . . . it would lead directly to disaster.”⁹⁷

In his letter on 12 January, Bottomley had clearly suggested to Portal that it was time to be blunt with Harris. Harris, he had maintained, should be specifically directed to attack Schweinfurt – a message, had it been sent, which left no room for denial. Yet Bottomley’s next approach to Harris, on 14 January, was in the form of another Directive, an instruction more often ignored in the past than actioned, and was again in the form of a plea rather than an order. After outlining the strategic policy agreed by the Combined Chiefs of Staff, Bottomley stressed the requirement for the closest co-ordination between the Eighth Air Force and Bomber Command. With regard to Schweinfurt, the Directive continued,

I am to request, therefore, that early consideration be given to the ways and means of destroying this target and that you attack it on the first opportunity when weather and other conditions allow, and that you continue to attack it until it is destroyed or until alternative directions are issued.⁹⁸

From the tone and sentiments expressed in Harris’s letter to Bottomley on 20 December 1943, it was clear that a stronger word than ‘request’ should have been employed in the formulaic introduction. In the initial draft prepared for this Directive, Bottomley did make one concession in his final paragraph. “High priority” he concluded,

must also be given to the destruction of those towns associated with the assembly of fighter aircraft, particularly Leipzig, Brunswick, Gotha and Augsburg. These instructions are not, however, to prejudice the attack on Berlin to which you are already committed.⁹⁹

In the actual Directive, however, the final sentence was omitted.

In a letter on 19 January 1944 to Arthur Street, Under Secretary of State for Air, and to Bottomley, Harris gave a strong indication that it was going to take more than a request from the Air Staff to make him change his ways. Schweinfurt, he reiterated, was a small, well defended target in an area where there were many similar small towns and therefore difficult to locate. He claimed that Bomber Command lacked the bombing aids necessary to locate the target and cautioned that it would be unlikely that visual bombing markers could be placed accurately enough for the target to be hit. Losses, he continued, would be heavy because the attack would have to take place in moonlight conditions. He claimed that it was an ideal target for the American Air Force but that for Bomber Command “the destruction of Schweinfurt by night is tactically impracticable.”¹⁰⁰ Harris concluded this letter by admitting that the intention to attack Schweinfurt, in moonlight, had been there for almost two years but conditions had never been exactly right, and that now “all chances of a successful attack by my Command on Schweinfurt have all gone.”¹⁰¹

On the night of 21/22 January 1944 Bomber Command launched a heavy attack on Magdeburg. Bufton, in a letter to Coryton, challenged Harris’s target selection. He reminded Coryton that the Directives of 10 June 1943 and 14 January 1944 had both called for attacks against German fighter air-frame and ball bearing factories. In the latter Directive, both Brunswick and Leipzig had been nominated for area attack and they were both in the vicinity of Magdeburg so that weather conditions could not have been a factor in selecting Magdeburg, which had not been identified as a potential target. “It now appears” remarked Bufton,

that the Command is operating to a policy of its own and is disregarding both the policy and the precise instructions for its implementation . . . I am forced to the conclusion that the selection of Magdeburg demonstrates clearly that Bomber Command does not intend to comply with the instructions from the Air Staff . . . I consider that the problem should be resolved immediately in order that the Air Staff may know where it stands.¹⁰²

In a lengthy briefing paper for the Air Staff on 24 January 1944, Bufton rebutted the reiterated claims made by Harris as to the unsuitability of Schweinfurt

and its associated factories as targets. He pointed out that the defences were insignificant when compared with Berlin, that it was closer than Berlin, and that the bombing aids provided, in the hands of competent operators, were capable of ensuring a successful strike. Bufton admitted that weather was a critical factor but insisted that the target was so important that the attack could not be delayed until ideal weather conditions prevailed. Risks, he asserted, had to be taken and, if necessary, the attack repeated.¹⁰³ Although his assistance would probably not have been welcomed at Bomber Command headquarters, Bufton provided an attachment to this letter suggesting a route and techniques to be employed for a successful attack.

Using Bufton's appraisal as ammunition, Bottomley re-entered the fray on 27 January 1944. He brushed aside Harris's objections and demanded that Schweinfurt be attacked at the first suitable opportunity. "To await completely ideal conditions" he declared, "would not be justified. I am to request therefore that you will now proceed with the execution of the instructions contained in the letter . . . dated 14 January 1944."¹⁰⁴

Finally, Harris complied. Bomber Command launched its first attack on the ball bearing factories at Schweinfurt on the night of 24/25 February 1944. Morley, who had asked to go on the raid as an observer but was refused permission, provided a special exhortation to be delivered at briefings. Crews were told that the operation would be one of the major battles of the war. Success could well mean an early ending to the conflict. He called it "A perfectly timed rapier thrust at a tiny, but vital, point in his economic anatomy [which] may precipitate his collapse."¹⁰⁵ Given the time lapse since Schweinfurt was first identified as a significant target, the choice of words, "perfectly timed," was not particularly judicious.

Unfortunately the raid was not a success. The Americans had launched an attack earlier on 24 February and Bomber Command followed up that night with 723 heavy bombers and eleven Mosquitoes. The attack was delivered in two parts, with a two hour interval, in an attempt to divert the German night fighters. As a diversionary measure it was reasonably successful. Although twenty-two bombers were lost in the first attack, only eleven were missing on the second. But the bombing was less satisfactory. According to the Path Finder Force Monthly Summary for March 1944

target conditions were found to be clear and the Visual markers on the first attack had no trouble identifying and marking the aiming point. Some Visual Backers-up however, tended to bomb short and quite an appreciable spread back, judging from crew reports, occurred to the S.W.¹⁰⁶

Undershooting, or creepback, was a problem of growing concern. Too many crews, in their natural anxiety to release their bombs and clear the target area, were aiming at the first target indicator seen.

This first attack by Bomber Command was followed by only one other major effort. On the night of 26/27 April 1944 the town was attacked by 215 Lancasters and eleven Mosquitoes. It was another failure. The low level marking was inaccurate and strong winds badly disrupted timings at the target.¹⁰⁷

Perhaps Harris had been correct. Schweinfurt might well have been a too difficult target. He, however, was not one to let the facts speak for themselves. In July 1944 he drew Air Ministry's attention to an item in the MEW's weekly intelligence report relating to the German ball bearing industry. Production, the MEW estimated, had fallen by fifty-four per cent. The report then claimed that if attacks were resumed, and imports from Sweden reduced, the chance existed that these efforts "*may well eventually have an effect on German military capabilities.*"¹⁰⁸ Harris argued that further discussion was superfluous. He expressed the hope that "the enthusiastic assertions of the past on this subject may in future be tempered with more discretion whenever targets of a like nature are urged upon us by the Ministry of Economic Warfare . . . I trust" he concluded,

that the MEW will be called upon to account for their overweening enthusiasm over the enemy's ball bearing position, in view of their calculations as to the effects already achieved at so heavy a cost in life and effort.¹⁰⁹

In his post-war *Despatch on War Operations*, Harris was somewhat less than straight forward in his references to Bomber Command's attacks on Germany's ball bearing industry. His words tend to give the impression that the war he waged was in accordance with the requirements specified in the Directives laid down by the Air Staff. "The directif [sic] of 10th June 1943, having assigned first priority to the joint attack of such targets by the R.A.F. and U.S. Eighth Air

Force” he asserted, “Bomber Command sent strong forces against Stuttgart, Kassel, Augsburg, Schweinfurt, Leipzig, Frankfurt, Magdeburg, and other centres upon which the aircraft industry depended.”¹¹⁰ No mention was made of the delaying tactics he employed, nor of the pressure that had to be applied before action was finally attempted.

Harris waxed indignantly in *Bomber Offensive* over the same question. “Over another panacea target, ball bearings,” he declared, “the target experts went completely mad.”¹¹¹ He then repeated many of the claims that he had made in his letters to the Air Staff. The target was too small, too distant, Sweden was a supplier, and Germany had the industrial capacity of Europe at hand. Moreover, if it was such a vital target, then it would either have been dispersed or gone underground.

When evaluating the merits or otherwise of attacks on the German ball bearing industry, it would be prudent to consider the opinion of Albert Speer, Hitler’s Reich Minister of Armaments and War Production. Post-war, he admitted that he first became conscious of a potential bottleneck in the ball bearing industry in September 1942 and warned Hitler of the dangers. It was Speer’s belief that had Harris abandoned his area bombing programme, and instead, concentrated on specific elements of the armament industry such as ball bearings, the war could have been largely decided by the end of 1943.¹¹² Perhaps, however, even Speer had not been in possession of all the facts regarding the ball bearing position during the war. Or, was he simply providing the answers his post-war interrogators desired?

Later, when interviewed by Seward in preparation of his Harris biography, Speer covered much the same ground as had appeared in his memoirs. Attacks, he believed, should have been repeated. It was, he continued, one of his nightmares that ball bearings, one of the bottlenecks, could be destroyed. “The chance to do us harm at Schweinfurt was very high”¹¹³ was the conclusion he reached.

Post-war investigations by British and American Bombing Survey Units have revealed that Speer’s fears were largely unfounded. Germany possessed ample quantities of capital equipment, much unused factory space, a plentiful supply of labour and an efficient repair organisation. Throughout the war German industry, except for the aero-engine and ball bearing factories, operated a single

shift work cycle. In the latter case, only nineteen per cent of the employees worked a second shift. With such reserves available, a considerable amount of superficial air raid damage was absorbed without interruption to the supply of war material. The Report of the British Bombing Survey Unit concluded that

the failure to recognise this very great reserve or machine tool capacity and machinery of all kinds was probably the major shortcoming of our economic intelligence during the war. Had the fact been appreciated . . . few would have been as sanguine as they were about the possible results of air attacks on centres of production or even on specific groups or factories themselves.¹¹⁴

The official American history, *The Army Air Forces in World War II*, stated that, with regard to ball bearings,

the original estimates, on the basis of which that industry had been selected for top-priority bombing, had been too optimistic. . . . Ball bearings . . . were too well cushioned in the production process: basic stocks were too large, the pipelines in the aircraft industry too well filled, and the possibility of economy too great for even the most successful bombing of the bearing plants to affect final aircraft production appreciably.¹¹⁵

Clausewitz has made clear that

War is the province of uncertainty: three-fourths of those things upon which action in war must be calculated, are hidden more or less in the clouds of great uncertainty.¹¹⁶

Nowhere is the proof of Clausewitz's maxim better displayed than in the problems that arose over Schweinfurt and German ball bearings during the Second World War. Schweinfurt in 1942 and 1943, in theory, provided a prime bottleneck industrial target and Harris erred in not accepting it as such. Whether it could have been destroyed by Bomber Command at that time, however, is another question. Perhaps, indirectly, also, Harris had been correct when he described Schweinfurt as another panacea because the authorities, British, American and German, were all unaware of the vast ball bearing stocks available within German industry.

With the benefit of hindsight it can now be seen that Bufton and the staff in the Directorate of Bomber Operations were working on false parameters when they called for attacks on the German ball bearing industry. Harris, for his part, refused to be diverted from his area bombing programme using as the excuse the inability of his force to create significant damage on small precision targets. What must not be overlooked is that the bombing Directives were issued on the best advice and information obtainable at the time, and the targets nominated were strategic decisions made by the highest authority. Harris was responsible for the tactical decisions as to how the nominated attacks were to be carried out. It was not his place to decide that the selected targets were wrong.

There are two unanswered questions. Firstly, why was Harris permitted to delay his attack on Schweinfurt for so long, contrary to the wishes of the Air Staff? Secondly, would earlier attacks on Schweinfurt, Path Finder Force led and equipped with H₂S, have achieved the results the Air Staff believed possible, and which Speer himself so greatly feared?

Harris, rightly, because it was a tactical decision, had the responsibility every morning to decide which target would be attacked that night. His primary tactical concerns were the weather conditions forecast for take-off, *en-route*, in the target area, and at bases in England when the bombers were due to return. With variable and rapidly changing meteorological situations it often became a matter of an educated guess with many lives held in an uncertain balance. His current Directive had nominated the targets he was expected to attack, frequently in their order of priority, but what he was required to attack and what he believed he could attack, often differed. Cloud, of course, because the heavily laden bombers had comparatively low ceilings, provided many problems. Cumulo-nimbus clouds, with significant vertical development, anvil tops around 40,000 feet in temperate latitudes, and providing high icing indices, were a constant worry. Such clouds also provided destructive turbulence for outward bound aircraft carrying heavy bomb loads and often exceeding the maximum-all-up-weight limitations. Cloud in the target area was also of concern because it determined not only whether or not a target could be attacked but also the type of attack to be employed.

Wind was another weather element which occasionally created significant problems for the bomber forces. Although jet streams had been identified as early as 1923, winds exceeding 100 knots around 20,000 feet still came as a surprise to

meteorologists and bomber navigators, even in 1944. On the night of 24/25 March 1944 Berlin was once again the target and forecast winds for the North Sea crossing were northerly at about thirty-eight knots. When the bombers finally made landfall, outbound, most found that they were many miles south of the required track indicating that the wind had been much stronger than forecast. It was later calculated that the wind had exceeded 100 knots but navigators who had found winds of that nature during the flight were neither believed by their captains, nor by authorities in England. Consequently, the bomber stream was scattered, timing was disrupted, and, according to Middlebrook, there was “a great gaggle of more than 700 aircraft spread over a frontage of at least seventy miles, with any centre there might have been well to the west of Berlin.”¹¹⁷ Seventy-two bombers were lost that night which became known in various Bomber Command messes and crew rooms as the ‘Night of the Big Winds.’

Another factor which Harris had to consider in planning which target to attack was the phase of the moon. A full moon and no cloud above medium levels usually meant that no distant German targets could be attacked. Comparatively short-range targets became the order of the day. Even then, they were not always successful. On the night of 3/4 May 1944 Maily-le-Camp, a German battle-tank depot and barracks south of Rheims in Northern France, was attacked by 362 bombers. Because of communications failure the Main Force was left orbiting the target waiting the call to bomb when they were engaged by *Luftwaffe* night fighters. Forty-two Lancasters were lost.

Harris also had to consider the time of the year in planning attacks. During the summer months, because of the short darkness period, only rarely were long range penetrations of German territory attempted.

Weather, for Harris, was not his only consideration. He had early learned that if he sent his bombers to attack the same area or the same target night after night the defenders on the ground and in the air would be waiting. In order to keep the efficient German night fighter controllers guessing it was necessary to vary the targets, launch diversionary raids, and make feint approaches to the German held coast in order to keep secret for as long as possible the actual Main Force target.

Target selection was a very delicate balancing act and mistakes — Nuremberg on the night of 30/31 March 1944 was one — were made. Although it was during the full moon period weather forecasts for this attack indicated that

high cloud would shelter the bombers on the way to the target but it was claimed the target would be in the clear for ground marking. Early that evening a Mosquito reconnaissance report indicated that while the forecast cloud over the route appeared unlikely to develop, the target itself was cloud covered. Nevertheless, despite opposition from Path Finder Force Headquarters concerning the route and the weather, the raid was ordered and ninety-five bomber crews paid the price for this error of judgement.

In March 1944 Harris attempted to clarify with Portal his understanding of the best role for Bomber Command in the months leading up to *Overlord*. His Directives, including *Pointblank*, were issued on the understanding that Bomber Command's attacks were to be largely complementary to those of the Eighth American Air Force. Harris argued that the policy of attempting to follow a detailed bombing programme rather than according him the freedom to choose his target from the current Directive was wrong. He continued,

If I am instructed that I must attack any nominated target or selection of targets in Germany 'as soon as possible' or 'whenever weather conditions permit,' I am bound to lay on such attacks when weather conditions are doubtful for these targets rather than to choose other targets for which conditions are much more favourable. Otherwise, I run the risk of finding afterwards that I could in fact, have attacked the programmed targets had I gambled on the weather . . . under these conditions frequent cancellations are inevitable. The problem is not merely a geographical one. It cannot be solved simply by giving me a large number of small targets widely distributed over Germany, since these can be attacked with prospects of success only in clear weather and the same difficulty arises.¹¹⁸

Harris pointed out that in this situation cloud over the target, or other unforeseen developments, would mean that either the attack would have to be carried out with limited prospects of success or, alternatively, cancelled. He reminded Portal that bombing attacks had become so complicated and required such extensive coordination that the provision of alternative targets and target selection must be made early. He sought a Directive which gave him total discretion in target selection on any given night. He added a proviso that,

when weather conditions, in so far as they can be predicted early in the day, give real prospects of success against nominated targets, these will be given preference over others where chances of success are equally good.¹¹⁹

Harris, on the occasions that he was questioned by Portal as to why a particular target had been attacked, frequently advised that it was because of weather conditions. In this chapter, although the weather conditions in both Augsburg and Schweinfurt could have been expected to have been similar, Harris chose to attack Augsburg, a lowly rated target at greater range and therefore providing increased risk for a trial daylight low level operation, in preference to Schweinfurt, a target which the Air Staff had been according a high priority for some considerable time. It provides one example of the problems that the Air Staff experienced in getting Harris to attack targets of their choosing rather than ones he preferred. Augsburg was not an isolated example.

One final observation is that Harris, by procrastinating, avoided for years, in the case of ball bearings, having to divert his forces from his area bombing programme. He suffered no penalty. It would appear that he saw it as a successful technique because he employed similar arguments and extended delays when the Air Staff, later in the war, demanded attacks on German oil facilities. But that is another story to be discussed later.

End Notes

¹ Clausewitz, *On War*, p. 41.

² Bufton Papers, 3/6, 'Increase of Striking Power by Application of Tactics,' 29 November 1941, p.3, para. 22, underlining in the original.

³ Webster and Frankland, Vol. IV, p. 146.

⁴ These figures, post-war, were found to have been an underestimate. The three main plants in Schweinfurt, in July 1943, employed 17,616 workers. See David MacIsaac (Ed.), *The United States Strategic Bombing Survey*, (London, 1976), Vol. III, pp.19 and 20.

⁵ Bufton Papers, 3/31, 23 February 1942. Also see Thomas M Coffey, *Decision over Schweinfurt*, (London, 1977), p.58, where Schweinfurt was described as "at least eleven centuries old . . . Its town hall had been built in 1570; several buildings around it dated from the 17th and 18th centuries. "

⁶ PRO AIR 20/5815, Baker to Harris, 7 April 1942, para. 2.

⁷ Other sources give the population as 60,000. See PRO AIR 41/43, Appendix 2, Annex, p. 9. The *Bomber's Baedeker* also quoted 60,000.

- ⁸ PRO AIR 20/5815, Harris to Baker, 11 April 1942, para. 5. Harris might also have mentioned distance to the target as Schweinfurt was just over 500 miles in a direct line from Lincoln. With dog-legs to avoid defended areas and attempt to mislead the German defenders, it could have meant a round trip of 1,200 or 1,300 miles.
- ⁹ Bufton Papers, 3/33, *Strategic Bomber Offensive*, 4 August 1942, para. 4.
- ¹⁰ Ibid., Hubbard to Morley, 6 August 1942, p. 3.
- ¹¹ Bufton Papers 3/47, Directive, 14 February 1942, para. 11.
- ¹² Webster and Frankland, Vol. I, p. 463, note 1.
- ¹³ See W J Lawrence, *No 5 Bomber Group R.A.F.* (London, 1951), pp. 64-8 for full details of the attack.
- ¹⁴ PRO AIR 14/3443, *Bomber Command Quarterly Review, April-May-June 1942*, No. 1, p. 5.
- ¹⁵ Harris Papers, H53, Selborne to Prime Minister, 27 April 1942, para. 3.
- ¹⁶ Ibid., para. 6.
- ¹⁷ Ibid., Churchill to Portal, 27 April 1942.
- ¹⁸ Ibid., 13A, Portal to Prime Minister, 29 April 1942, para. 5.
- ¹⁹ Ibid., 13, Baker to Harris, 30 April 1942, para. 2
- ²⁰ Harris Papers, H65, 10, Harris to Prime Minister, 2 May 1942, para. 4.
- ²¹ Ibid., para. 6.
- ²² Ibid., para. 10.
- ²³ Ibid., para. 17.
- ²⁴ For a full description of the Augsburg operation see, Jack Currie, *The Augsburg Raid*, (London, 1987).
- ²⁵ Churchill Personal Minute, M157/2, Churchill to Harris, 3 May 1942.
- ²⁶ Webster and Frankland, Vol. I, p.464.
- ²⁷ Seward Interview, Tape 8, Side B.
- ²⁸ Webster and Frankland, Vol. II, pp. 289-290. See also Terraine, *Right of the Line*, pp. 537-540.
- ²⁹ Webster and Frankland, Vol. II, p. 290.

- ³⁰ Harris Papers, H53, 14, Harris to Baker, 5 May 1942, para. 2.
- ³¹ Ibid., p. 2, para. 7.
- ³² PRO AIR 20/5835, Baker to Bottomley, 18 November 1942, para. 4.
- ³³ Ibid., para. 8.
- ³⁴ Bufton Papers, 3/33, 20 November 1942.
- ³⁵ Ibid., para. 12.
- ³⁶ Ibid., p. 2, paras. 6 and 9.
- ³⁷ Ibid., p. 2, para. 9.
- ³⁸ Ibid., . p. 2, para. 13 (i), 780 miles with diversions, the paper suggested
- ³⁹ Webster and Frankland, Vol. IV, Bottomley to Harris, Letter and Enclosure, 21 November 1942, p. 246, para. 6.
- ⁴⁰ Ibid., Harris to Bottomley, 23 November 1942, p. 249, para. 2.
- ⁴¹ Ibid., p. 247, para. 3.
- ⁴² Ibid., p. 248, para. 8.
- ⁴³ Ibid., p. 251, para. 8.
- ⁴⁴ Ibid., p. 252, para. 12.
- ⁴⁵ Bufton Papers, 3/32, Bufton to Bottomley, 26 November 1942, para. 16.
- ⁴⁶ Ibid., Baker to Bufton, 26 November 1942, para. 17.
- ⁴⁷ Webster and Frankland, Vol. II, p. 10.
- ⁴⁸ Craven and Cate identify the bomber force to be based in England as either the Eighth Air Force or VIII Bomber Command. On 15 October 1943 the Eighth and Ninth Air Forces came under the title of the United States Army Air Forces in the United Kingdom (USAAFUK). See W F Craven and J L Cate, (Eds.), *The Army Air Forces in World War II*, (Chicago, 1949), pages 211 and 643.
- ⁴⁹ Webster and Frankland, Vol. IV, p. 153.
- ⁵⁰ PRO AIR 41/57, Frankland, *The Planning of the Bomber Offensive and its Contribution to German Collapse*, p. 108.
- ⁵¹ Ibid., p.109.
- ⁵² Bufton Papers, 3/54, *Priorities for Air Attack among Economic Targets in 1943*, 4 February 1943.

⁵³ Ibid., p. 1, para. 2.

⁵⁴ Ibid., p. 3, para. 15.

⁵⁵ Bufton Papers, 3/54, *Notes on the Joint Employment of the British and American Bomber Forces under the C.C. of S. Directive*, 3 February 1943, p. 1, para. 2.

⁵⁶ Ibid., p. 2, para. 15.

⁵⁷ Ibid., p. 3, para. 19.

⁵⁸ Several years later, Harris showed that nothing had been forgiven or forgotten, particularly relating to staff in, or closely related to, the Directorate of Bomber Operations. In the taped interview with Saward, Harris provided another diatribe concerning Bufton, Bottomley and Baker. With regard to Baker he gloated, "I got my own back on Baker I must say. He wanted the command of a Group and I stopped that. I told Portal if you send him to me I'm going." (Tape 5, Side A). Suffice it to say, Baker was never appointed as a bomber Group Commander – he went as SASO, HQ Air Command, South East Asia, and, post-war, became AOC Coastal Command.

⁵⁹ Bufton Papers, 3/33, Bufton to Bottomley, 23 May 1943, p. 1, para. 1.

⁶⁰ Ibid., para. 3. The EOU, the American equivalent of the British MEW, was based in England.

⁶¹ PRO AIR 20/5835, Bufton to Bottomley, 26 May 1943, para. 2.

⁶² See Haywood S Hansell, Jr., *The Strategic Air War against Germany and Japan*, (Washington, 1986), p. 74. Hansell described Bufton as "a most valuable member of the planning team. He had been, and continued to be, an important contributor to the bomber offensive." Hughes, an Englishman, was the brother of the much criticised Captain Hughes of the aircraft carrier *HMS Glorious*, lost in June 1941 during the evacuation from Norway.

⁶³ PRO AIR 20/5835, Bufton to Bottomley, 4 June 1943, para. 2.

⁶⁴ Ibid.

⁶⁵ Giulio Douhet, *The Command of the Air*, (Washington, 1983), p. 50.

⁶⁶ Ibid., p. 60.

⁶⁷ For full details of the work and members of the committee, see Craven and J L Cate, Vol. II, Section II, pp. 348-376.

⁶⁸ Webster and Frankland, Vol. II, p. 30.

⁶⁹ PRO AIR 20/5835, Bufton to Bottomley, 15 July 1943, para. 7.

⁷⁰ PRO AIR, 20/5835, Bottomley to Harris, 25 July 1943, para. 1.

- ⁷¹ Ibid., Bufton to Coryton, 2 September 1943, para. 6.
- ⁷² Ibid., Bufton to Coryton, 15 October 1943, para. 12.
- ⁷³ PRO AIR 20/5835, Bufton to Coryton, 30 November 1943, para. 5.
- ⁷⁴ Ibid., para. 7.
- ⁷⁵ Ibid.
- ⁷⁶ Portal Papers, 1943, File 10, 57a, Harris to Prime Minister, 3 November 1943, p. 2.
- ⁷⁷ Ibid.
- ⁷⁸ Ibid.
- ⁷⁹ PRO AIR 41/43, Squadron Leader E B Panter, *The RAF in the Bombing Offensive against Germany, The Full Offensive February 1943 February 1944*, (London, 1950), Vol. V, p. 155.
- ⁸⁰ PRO AIR 2/4477, Bottomley to Harris, 17 December 1943, para. 3.
- ⁸¹ Ibid., para. 5.
- ⁸² Ibid., Harris to Bottomley, 20 December 1943, para 1.
- ⁸³ Ibid., para. 3.
- ⁸⁴ Ibid., para, 10.
- ⁸⁵ Bufton Papers, 3/45, Bufton to Bottomley, 19 December 1943, para. 3.
- ⁸⁶ Ibid.
- ⁸⁷ Bufton Papers, 3/45, Draft reply for Bottomley from Bufton, No Date, para. 5. The only changes made by Bottomley, on 23 December 1943, were the substitution of 'Combined Chiefs of Staff' for Air Staff and 'memorandum' for Paper. See Panter, p.146.
- ⁸⁸ *Overlord* - the code word for the planned invasion of France in May 1944.
- ⁸⁹ Bufton Papers, 3/30, Harris to Under Secretary of State, 28 December 1943, para. 3(i).
- ⁹⁰ PRO AIR 20/5835, Bufton to Lawrence, 28 December 1943, p. 1, para. 4.
- ⁹¹ Ibid., p. 2.
- ⁹² Bufton Interview, Tape 6, Side A, October 1991.
- ⁹³ Neillands, *The Bomber War*, p. 349.
- ⁹⁴ PRO AIR 20/5815, Bottomley to Portal, 12 January 1944, para. 8.

- ⁹⁵ Naxos, German code word for Telefunken FuG 350, passive sensor for detecting H₂S transmissions.
- ⁹⁶ PRO AIR 20/3223, Harris, *The Employment of the Night Bomber Force in Connection with the Invasion of the Continent from the U. K.*, 13 January 1944, p. 1, para. 1. Capitals used in the original.
- ⁹⁷ Ibid., p. 8, para. 22.
- ⁹⁸ PRO AIR 20/5835, Bottomley to Harris, 14 January 1944, p. 2, para. 8.
- ⁹⁹ Ibid., p. 3, para. 9.
- ¹⁰⁰ PRO AIR 2/4477, Harris to Under Secretary of State for Air and Bottomley, 9 January 1944, p. 3, para. 12.
- ¹⁰¹ Ibid., p. 4, para. 16.
- ¹⁰² PRO AIR 20/8148, Bufton to Coryton, 22 January 1944, paras., 3, 4 and 5.
- ¹⁰³ PRO AIR 20/5815, Directorate of Bomber Operations Paper, 24 January 1944.
- ¹⁰⁴ PRO AIR 20/5835, Bottomley to Harris, 27 January 1944, paras. 6 and 7.
- ¹⁰⁵ Bufton Papers, 3/32, Morley Paper, Undated. p. 2, para. II.
- ¹⁰⁶ PRO AIR 25/156, Path Finder Force Monthly Summary, March 1944, p. 4, para. 8.
- ¹⁰⁷ Middlebrook and Everitt, *The Bomber Command War Diaries*, p. 500.
- ¹⁰⁸ Webster and Frankland, Vol. IV, Harris to Air Ministry, 8 July 1944, p. 253, para. 4. Emphasis added by Harris.
- ¹⁰⁹ Ibid. Paras. 5 and 7.
- ¹¹⁰ Harris, *Despatch on War Operations*, p. 21, para. 91.
- ¹¹¹ Sir Arthur Harris, *Bomber Offensive*, (London, 1947), p.221.
- ¹¹² Speer, *Inside the Third Reich*, p. 280.
- ¹¹³ Saward Interview, Tape 12, Side A, 1971.
- ¹¹⁴ Solly Zuckerman, *The Strategic Air War against Germany 1939-1945 : Report Of the British Bombing Survey Unit*, (London, 1946), p. 83.
- ¹¹⁵ Craven and Cate, Vol. III, p. 45.
- ¹¹⁶ Clausewitz, *On War*, p. 42.

¹¹⁷ Martin Middlebrook, *The Berlin Raids*, (London, 1988), p. 284.

¹¹⁸ Harris Papers, H83, 12, Harris to Portal, 24 March 1944, p. 2, para. 6. Underlining in the original.

¹¹⁹ *Ibid.*, p. 3, para. 8.

Chapter Six

Overlord – Before and After

By late 1942 it had become clear to most Allied political and military authorities, but not Harris, that final victory would not be achieved by the bombers alone but would ultimately require an invasion and subsequent continental military campaign. The long term tasks for the Anglo-American strategic bomber forces in order to make *Overlord* possible, had been adequately, if somewhat loosely, detailed in the *Casablanca* and *Pointblank* Directives issued to the bomber force commanders in January and May 1943. Under the terms of these Directives attention was directed not at ways of avoiding defeat but refocused on the efforts essential to prepare the way for final victory. What is surprising is that little thought was apparently given, until virtually early 1944, as to what tasks the combined strategic bomber forces would be required to perform not only to make invasion possible but also to ensure that the subsequent military operations were successful. The planners had faced a daunting task but their selection of the Transportation Plan, based as it was on the assumption that it would provide some assistance to the invading forces by preventing German reinforcements reaching threatened areas, appeared to some to provide an insufficient reason for the Plan's acceptance.

The stage had thus been set for disagreement and extended arguments. Opinions differed widely with, on the air side, Harris, Bufton, and General Carl Spaatz, Commander of the United States Strategic Air Forces in Europe, all apparently operating from different song sheets. Portal, aware that the world-wide prosecution of the war had reduced Britain almost to bedrock in both material and human resources, knew that an early end to the war was required. However, he never exhibited great enthusiasm over the prospects offered in the Transportation Plan and his initial acceptance of it appeared reluctant. It gave the appearance of a drowning man clutching at straws. The Supreme Commander, General Eisenhower, also grew concerned at the lack of decision regarding the formulation of an air plan for *Overlord* and at one stage advised Churchill that unless positive progress was made shortly he would be offering his resignation.

Finally, in the arguments relating to the formulation of an air plan for *Overlord*, there is the political dimension. Churchill was never greatly enthused about the prospects offered by an invasion of Western Europe. He had long sought a Mediterranean solution to ending the Second World War with thrusts aimed at the Axis soft under belly. Once *Overlord* became a reality his focus was directed at post-war political problems arising from the deaths of friendly civilians in the occupied territories at the hands of bomber forces preparing the way for the Allied armies.

Although the various topics that have already been discussed in the ongoing disagreements between the Air Ministry and AOC Bomber Command have generally been considered in isolation, each was but a small part of an extremely large picture. Nowhere is this better exemplified than in the protracted arguments and discussions, at the highest levels, as to the best employment of the strategic bombing forces both before and after the landings in Normandy on 6 June 1944.

The Casablanca Conference of January 1943 had determined not only the strategic purposes in which the bomber forces would be employed, but also the broad lines on which Allied strategy would be based during the remaining war years. The combined Allied staff that was formed became known as COSSAC.¹ Later in 1943, after General Dwight Eisenhower had been appointed Supreme Allied Commander, they were absorbed in the Supreme Headquarters Allied Expeditionary Force (SHAEF). In April the same year the planning and preparation commenced for full scale military operations on mainland Europe, sometime in 1944. The initial plan for Operation *Overlord*, as the venture was called, was first presented at the Quebec Conference in August 1943 where it was endorsed by the Combined Chiefs of Staff. Three months later, at conferences in Cairo and Teheran, Churchill, Roosevelt, Stalin, and Chiang Kai-shek, approved military operations in 1944.

By the end of 1943 Eisenhower had been named Supreme Commander, with Air Chief Marshal Sir Arthur Tedder his Deputy. Three subsidiary appointments were also made: Admiral Sir Bertram Ramsey was appointed Allied Naval Commander-in-Chief; General Sir Bernard Montgomery as Commander-in-Chief, Twenty-First Army Group; and Air Chief Marshal Sir Trafford Leigh-Mallory as Air Commander-in-Chief, Allied Expeditionary Air Force (AEAF). Jointly this

group were charged with the enormous responsibility for the preparation of plans for the first phase of Operation *Overlord*.

Leigh-Mallory's appointment was unfortunate. He had been selected because of Portal's initial belief that the major air contribution to *Overlord* would be the gaining of air superiority over the beachheads. But Leigh-Mallory, as AOC 12 Group during the Battle of Britain, had not performed well, showing himself to be an individualist and not a team player. When No.11 Group, responsible for the defence of London and the south-east of England, called for support at the height of the battle, all too frequently Leigh-Mallory's Group took too long to form up their 'big wing' and the battle was often over before they arrived.² Leigh-Mallory was also overtly ambitious. His declaration to Sir Keith Park, in February 1940, whom he was about to replace as AOC No. 11 Group, "that he would move heaven and earth to get Dowding removed from Fighter Command,"³ marked him as one to be watched closely by his colleagues. Later, when appointed Air Commander, AEA, he had visions of becoming the supreme air commander of both the strategic and tactical air forces. Moreover, as would later be discovered, his American peers found him so pompous that they found it difficult to assess his ability and they made little effort to understand him. His appointment would prove to be a matter of some concern among the senior Allied staff.

One part of Leigh-Mallory's problem was personal. His austere manner and apparent lack of warmth alienated most of those with whom he came in contact – especially the Americans. According to Zuckerman, who was far from being antagonistic, Leigh-Mallory was, at least to the Americans, "an unfortunate burden they had to bear or bypass; they regarded his appointment as unnecessary."⁴ On occasions Leigh-Mallory could also display an obtuseness that even the British found difficult. He was isolated not only from the 'Bomber Barons' but also Eisenhower, Montgomery and Tedder. According to Tedder, his weakness was "his desire to interfere with subordinate commanders."⁵ Tedder pointed out to him that his job was not to control the forthcoming battles in the air because they were battles he was not equipped to fight. His job was to control the commanders of the air forces involved.

The Air Plan for *Overlord* was actually initiated in May 1943 with the issuing of the *Pointblank* Directive. Although the primary mission statement of *Pointblank*

repeated that which had been in the *Casablanca* Directive, an additional sentence had been added. Physical destruction and the weakening of morale were to be “construed as meaning so weakened as to permit initiation of final combined operations on the Continent.”⁶ The reduction of German morale either by military defeat or internal unrest had, for Churchill and the British Chiefs of Staff, become a basic requirement prior to the launching of a Second Front.⁷ Target selection for *Pointblank* comprised six specific target systems but was further broken down into seventy-six precision targets in three major elements of the German war machine: U-boats, *Luftwaffe* and its support services, and specific supporting industries. The principal aim was the reduction of German fighter aircraft strength; U-boat yards and bases; remainder of the German aircraft industry; ball bearings and oil. The pursuance of *Pointblank* requirements thus came to be used by both Harris and Spaatz as excuses for deferment of particular requirements for *Overlord*.

The initial problem facing the Joint Planning Staff headed by Leigh-Mallory was that unless measures were taken beforehand, the German authorities had the greater capacity to concentrate their forces, using the network of European roads and railways, than did the Allies, who would be landing on open beaches. Their first plan was therefore designed as an attempt to at least delay the movement of enemy forces attempting to reinforce the assault area in Normandy. The aim was to force German reserve divisions, *Panzer* and infantry, to have to detrain at least a hundred miles from the battle area and thence proceed by road. Target selection for this plan centred on railway targets about sixty miles from the Normandy beaches with additional targets outside that area to confuse German intelligence authorities. No action was required immediately because it had been estimated that repairs could be effected within fourteen days so any bombing programme could not commence more than a fortnight before the assault. A draft of this first plan was submitted on 30 December 1943.

In the meantime, Professor Solly Zuckerman had been appointed as Scientific Adviser to Leigh-Mallory's staff. Zuckerman had only recently returned from the Mediterranean theatre where he had conducted a detailed investigation into the effects of bombing on communication targets in Corsica and Italy. His report had been approved by the Air Staff and Leigh-Mallory was advised that future plans should largely be based on Zuckerman's findings.

In general terms Zuckerman claimed:

If the measure of success of air attacks on enemy rail and road communications is taken as the destruction of the means of communication, then the offensive carried out against rail targets in Southern Italy must be regarded as an outstanding success.⁸

But his preamble also carried a warning. Neither railway lines nor roads were ever completely blocked and the enemy was able to move within “the limits imposed by the capacity of the transport at his disposal.”⁹ Success was achieved, Zuckerman argued, not by the cutting of railway lines or the blocking of roads, but by the destruction of rolling stock, locomotives, and repair and servicing facilities. The damage created was sufficient to reduce locomotive and rolling stock availability below that necessary for the military requirements. Destruction of the means of communication also had another benefit: it tended to lower civilian morale.

In one section on special requirements in his Report, Zuckerman stated that both rail and road bridges were uneconomical and difficult targets. During September and October 1943 no fewer than thirty-seven rail bridges were attacked in Italy but only seven were destroyed or damaged. His finding was that 500lb General Purpose bombs were insufficient to destroy bridges even when direct hits were secured. If it was necessary to use either 1,000 or 2,000lb bombs then he considered bomb loads became uneconomical. It must have been heartening for Zuckerman to receive advice from the Air Staff that similar findings with regard to bridges had also been given, in July 1943, after a meeting at the Ministry of War Transport.¹⁰ During the discussion at this meeting no mention had been made concerning bridges but in an appendix, added to the notes of the meeting, they were indicated as potential tactical but not strategic targets.¹¹

Harris, aware of the demands that could be placed on Bomber Command made an early attempt to pre-empt future requirements by confirming he identified his bombers as a war-winning force. It will be remembered that in November 1943, in a note to Churchill, he had claimed that with the support of the American Eighth Air Force, Berlin could be wrecked from end to end and Germany forced to surrender.¹² A little over four weeks later, in a letter to the Air Ministry, he argued that it was possible his Lancaster force alone, could by 1 April 1944, bring “a state of devastation in which surrender is inevitable.”¹³ Despite the planning that had

already been undertaken, it is clear that Harris at this time was not concerning himself with an air offensive to make *Overlord* possible. Rather, he still had in mind an offensive that would make it unnecessary.

In response, Portal advised Harris that, for good or ill, the authorities were committed to *Overlord*. He also reminded Harris that, as CAS, it had always been his view that the co-operation of the heavy bomber forces would best be achieved by placing "all or part of them 'at the disposal' but not 'under the control' of the Supreme Commander."¹⁴ Portal then added that he would define the tasks to be carried out by both Harris and Spaatz¹⁵ but that the methods they employed would be the responsibility of the individual strategic bomber force commanders. In order to have a clear idea of possible targets, and for the Supreme Commander to be aware of Bomber Command's limitations, early liaison was essential. Harris was advised that an early meeting with Spaatz and Leigh-Mallory was required.

Harris's response was typical. He confirmed his willingness to discuss the problems with Spaatz and Leigh-Mallory but first he required confirmation of two points. Would the general principles regarding the bomber offensive, embodied in both the *Casablanca* and *Pointblank* Directives, continue to apply? He had used both as providing a *carte blanche* for his area bombing, and he remained convinced that a continuation of the offensive against Germany proper was essential. In his opinion it was the only way to ensure that the *Luftwaffe* fighter forces were kept fully involved. Secondly, he admitted he saw no problem for his heavy bomber forces with regard to pre-invasion, target selection. However, he appeared less enthusiastic over the tactical targets to be attacked immediately prior to the invasion. These required, he pointed out, the fortuitous coincidence of suitable weather conditions. For this reason it was his hope that the chosen date for invasion would take possible weather conditions into account.¹⁶

Portal, perhaps sensing reluctance in Harris, responded quickly. He reminded his bomber commander that the *Casablanca* Directive had laid down that "when the Allied armies re-enter the Continent you will afford them all possible support in the manner most effective." Until that time, Portal continued, or until you are ordered otherwise, the broad aim applies. At an as yet undecided date, Portal confirmed, Bomber Command's primary object "will become the support, but not necessarily the direct support of Operation Overlord."¹⁷

Portal, however, weakened his case somewhat when he conceded that even though *Overlord* had become Harris's first priority, that did not necessarily mean that his area offensive was no longer required. In fact, Portal made clear, it should continue on as great a scale as possible. Success or otherwise, however, would not be measured by the destruction created in Germany, but rather on the assistance provided *Overlord*.

In closing this letter, Portal pointed out to Harris that during the preparatory period before the invasion, Leigh-Mallory would exercise operational control "in such a manner as to lend the maximum support to the strategical offensive."¹⁸ It was not a reminder that Harris would have enjoyed reading. Although nominally, Leigh-Mallory had responsibility for only the American and British tactical air forces, the reminder must have caused alarm bells to sound for Harris that it would not all be smooth sailing.

On 13 January 1944, Harris, perhaps in an attempt to prevent what he saw as a misuse of the strategic bomber forces, issued a lengthy memorandum. Although the extract has been quoted in the previous chapter, its relevance is such that it can bear repetition. His first sentence set the tone. It was almost a lament. "“OVERLORD”" he conceded,

must now presumably be regarded as an inescapable commitment and it is therefore necessary to consider the method by which our most powerful weapon, the heavy bomber force, can be brought to bear most effectively in support of it.¹⁹

Without qualification, he confirmed that he considered his Command's task was to continue the destruction of Germany's industrial cities. Operations, he claimed, were limited by the aircraft in use, and the complex nature of the operational techniques required to overcome increasingly sophisticated German defences. Day operations were impossible because his crews lacked the necessary training, and the aircraft were deficient in both ceiling capability and the defensive armament essential for such activities. Even with the Path Finder Force and the navigation and bombing aids they possessed, Gee, Oboe, and H₂S, target location still depended heavily on weather conditions. As for army support operations, Harris claimed that, at best, they could not be relied upon because it took a minimum of seven hours from the time a target was selected until the first

bomber was airborne.²⁰ Harris's judgement was that the best employment for Bomber Command in support of *Overlord* would be the continuation of area bombing.

In his cover note to Portal, Harris claimed that both Montgomery and Leigh-Mallory, "expressed general agreement."²¹ It is not known whether or not Montgomery approved, but in fact, Leigh-Mallory was not happy with the stance adopted by Harris. His opinions were set out on 27 January 1944, in tabular form, in an appendix to Portal's reply. The first column of the three column table detailed the limitations that Harris believed would prevent his bombers from fulfilling the pre-invasion bombing programme envisaged by the planners. The second column contained Leigh-Mallory's comments while the third column was completed by comments made by the Air Staff, prepared by Bufton.²²

Leigh-Mallory first made the point that he did not understand why targets in the invasion area should be more difficult than industrial cities in Germany. He argued that because the targets were at reasonably short range, the increased accuracy of both Gee and Oboe should enable bomb aimers to deliver telling blows. He also admitted there were valid reasons for continuing the attacks on German cities, but called for the diversion of the bomber force, in whole or in part, at least in the preparatory phase of *Overlord*. "The failure of Operation *Overlord*" he argued, "would result in far graver repercussions than a temporary cessation in the bombing of German centres."²³

Harris, in the meantime, perhaps sensing that his case required support, wrote again to Robert A Lovett, the American Assistant Air Secretary. It was an expression of his concern at the possible diversions Bomber Command would have to accept if it was to fulfil *Overlord* requirements. Harris made clear to Lovett that he was convinced that Bomber Command's priorities must continue to be Germany's major industrial centres including Leipzig, Magdeburg, Brunswick, and in particular, Berlin. Harris admitted that his worst fear was that diversions to panacea, *Overlord*, or *Crossbow*²⁴ targets, would mean

that we shall fail to finish the job this spring . . . by the autumn, the defences will be so powerful that we shall be unable to get through them except at a much higher cost . . . I see no reason why the Germans should not then carry on a defensive war for a very long time.²⁵

Any idea of co-operation for the attacks of precision targets in the preparatory phase of *Overlord* appeared far from Harris's plans.

Lovett delayed his reply, primarily in the hope that he could provide a more positive response. His answer, in March, was: "the hell with trying to explain the problems to the kibitzers."²⁶ He agreed that the Allied command structure had become complicated, but he believed that if Spaatz and Harris were able to continue their bomber offensive, he had no particular concerns. His major worry was that once ground forces become involved, as had happened in the Mediterranean, "the bottom falls out of an orderly strategic air program and almost hysterical use is made of airpower in haphazard attempts 'to help the boys on the ground' "²⁷

Portal responded to the Harris Memorandum and the comments of Bufton and Leigh-Mallory late in January 1944. Generally, he agreed with his Air Staff's comments. The commitment to *Overlord*, he reminded Harris, was irrevocable. Bomber Command, he insisted,

will wish to help to the utmost, even if this means trying new technique [sic] and tactics against the kind of targets which you rightly consider to be outside the scope of normal night bomber operations . . . the tasks that Bomber Command will be asked to perform will be reasonable and practicable.²⁸

On 10 January 1944 the tentative plans drawn up by COSSAC planners were discussed at the first meeting of the Allied Air Forces Bombing Committee. This Committee had been established to assist Leigh-Mallory in determining a policy for use by both British and American strategic bomber forces in support of *Overlord*. In effect, it became, the Operations Planning Section of his Headquarters. Air Commodore Kingston-McCloughrey, Deputy Chief of Operations for the AEF was appointed Chairman, and it had as members Professor Zuckerman, E D Brant of the Railway Research Service (RRS), and representatives from Air Staff Plans in the Air Ministry. It was empowered to co-opt other members from a wide range of sources including the Directorate of Bomber Operations. The defined tasks were: to advise Leigh-Mallory on suitable targets; the relationship between the bombing force available and the specific

commitments and priorities to be accorded particular target systems; and the amount of effort to be applied in order that the commitments would be met.²⁹

The Committee met again on 11 and 13 January and discussed the suggestions of Captain C E Sherrington, Head of the RRS, and Brant, concerning potential targets within the continental rail network. Unfortunately, although both knew a lot about the European rail system, they knew nothing about bombing, or the effectiveness of bombing against particular elements of a rail system.³⁰ Brant's argument, that no matter what effort was expended against rail centres in both France and Belgium, there would always be alternative routings available, did not engender any great confidence in the railway plan. At the third meeting, on 13 January 1944, the leaders of the United States Strategic Air Force were first introduced to what eventually became known as the Transportation Plan.

Leigh-Mallory, to this point, had taken no part in discussions relating to the Transportation Plan. But time was running out. On 18 January 1944 he was given a paper to consider: 'Operation Overlord – Delay and Disorganisation of Enemy Movement by Rail.'³¹ It had been prepared by Zuckerman, now working in Air Plans in AEA, and confirmed the thirty-three railway centre targets in northern France and Belgium suggested by Brant. It also added another thirty-nine railway targets in Germany. In essence, this paper made the point that considerable risks would be run if it was considered that all rail links leading towards the landing areas could be either cut, or blocked, by bombing. A better target, the paper suggested, would be railway servicing centres. They covered large areas and their destruction would seriously reduce motive power.³²

The plan produced by Zuckerman for the preparatory phase of *Overlord* was based on that which had earlier been successfully employed for operations in Sicily and southern Italy in 1943. But why should a plan prepared for a long, narrow, mountainous country, be able to be successfully transferred to a broad, flat area such as in north-west France? In 1943, from Rome to Salerno, there was but one standard gauge, double track, electrified railway line. Paralleling that line was another from Rome to Naples, standard gauge, double track. The destruction of repair facilities and marshalling yards on those lines, to provide blockages for troop movements, had been a comparatively simple task, readily achieved.

But the French and German rail systems were not only better organised but also better equipped and thus provided a more difficult target. Additionally,

marshalling yards in the Italian rail network had been of little importance because of the parallel track system while in both France and Germany, because of the complex rail structure, they were of vital importance in the organisation and loading of trains. Furthermore, the rail system was essential in Germany because the extensive inland waterway system had become overloaded and coastal shipping was impossible. But, as Zuckerman acknowledged, even massive destruction in marshalling yards will only delay movement of one train by a matter of hours. Could the destruction required in north-west France be sufficient to delay the movement of reinforcing *Panzer* forces to the *Schwerpunkt* ? Zuckerman claimed it would. His argument, in view of his rejection of both bridges and marshalling yards as profitable targets, was perhaps, somewhat misconceived.

Zuckerman's plan, however, although still not completely thought out, was more broadly based. His consideration of rail targets envisaged not only the restriction of military movement but also the reduction of civilian economic traffic. His goals, although they conflicted with the important rule of war relating to concentration, were both short and long term. The short term and immediate aim was to restrict the movement of German reserves to the battle area in Normandy. His long term aim was the paralysis of the German economy and as such was in line with the lines being pursued by both Harris and Spaatz. Unfortunately, his advocacy of a target system considered anathema by both Harris and Spaatz meant that the bomber commanders and the planner held opposing views.

The following day, 19 January, Portal called a meeting attended by Harris, Spaatz and Leigh-Mallory. At this meeting it was agreed that the objectives defined in *Pointblank* should remain unchanged. German aerodromes and the fighter forces they supported, together with the industries upon which they relied, remained the first priority targets. In view of the broad agreement reached in the Air Ministry as to the need for a specific bombing plan prior to the landing in Europe, the unanimity was surprising.

By late January 1944 it had been made very clear that Harris was standing firm. He continued to argue that the war would be won by the continuation of area bombing. Counter proposals were rejected. Early in January, Zuckerman visited Harris in his home, believing that the invitation was to discuss earlier air operations in the Mediterranean. Instead, Harris delivered an harangue on what he saw as

unsatisfactory staff changes in the American Air Force. Next morning, Harris posed one question. Were coastal defences suitable targets for strategic bombers? According to Zuckerman, his confirmation that they were, was not the response required.³³ The subject was not mentioned again. Zuckerman had unwittingly rendered himself *persona non grata* with Harris. It was all explained, early in April 1944, in a spiteful letter that Harris wrote to Lovett in Washington.

Harris's concern was that he believed he had uncovered a plot by Zuckerman to divert Bomber Command's aim. "Our worst headache" he lamented,

has been a panacea plan devised by a civilian professor whose peacetime forte is the study of the sexual aberrations of the higher apes. Starting from this sound military basis he devised a scheme to employ almost the entire British and U. S. heavy bomber forces for three months or more in the destruction of targets mainly in France and Belgium Fortunately, Tedder has entirely sound ideas about the importance of strategic bombing and there is no fear that he will agree to its being abandoned in favour of slogan and panacea warfare even if others should try to revise the monkey fancier's plan in its original form.³⁴

The initial air plans for Overlord were thus largely based on what were seen as Army requirements. Firstly, the forces had to be safely transported to the Normandy beaches and a landing made. If those forces were not to be immediately ejected it was essential that the large German reserves, *Panzer* and infantry divisions, be prevented from speedily reinforcing the beach and landing area defenders. Railways were identified as the key for the rapid movement of both German reserve forces and essential supplies. The first plan thus envisaged the cutting or blocking of those lines leading to the assault area. A total of sixteen significant points were identified within a radius of approximately one hundred miles from the landing beaches. The plan appeared economical; it would not interfere largely with *Pointblank*; the required bomb lift would be reasonable; and it was a task well within the capabilities of the bomber forces.

There were, of course, problems. Successful interdiction required that all the selected targets be destroyed. One line left open rendered the plan worthless and the assault forces at great risk. Additionally, bombing attacks on the selected targets had to take place as close to the selected landing day as possible because

rail repairs could be effected rapidly. Significant attacks, such as operations against the sixteen nominated targets would mean that the landing area would be identified by the German defenders and thus impose increased risks for the landing forces. Plans could not be made to attack the selected targets immediately prior to D-Day because of the weather factor. Visual conditions were essential if success was to be achieved and in Europe weather conditions could never be guaranteed. Weather is not a factor to be gambled upon and thus the plan simply left too much to chance. With D-Day tentatively set for May, time was beginning to press and positive decisions were required. They would not be reached early.

Meanwhile, by the end of January 1944, Bufton was becoming increasingly concerned at Harris's continued opposition to the plans being considered for strategic bomber operations prior to D-day. In a note to Bottomley and Portal, he posed three questions. Did they believe that Harris, by a continuance of an area bombing programme, could bring the war to a successful conclusion by 1 April 1944? Was it accepted that the maximum efforts were being made to reduce *Luftwaffe* effectiveness? Does area bombing, even by employing the entire bomber force, provide the most immediate and maximum assistance to the planned invasion either side of D-day? His own response was a categorical denial. If nothing is done, Bufton declared, the Air Staff would be "unable to meet the severe criticisms that will be levelled . . . if 'OVERLORD' is wholly or even partially unsuccessful."³⁵

In another note to Bottomley, Bufton requested an appointment with Portal. Bomber Command, he asserted, appeared to be following an agenda of its own making. By so doing it was disregarding not only the policies but also the instructions determined by the Air Staff. Bufton acknowledged the seriousness of his allegations, but confirmed that, in his opinion, Air Staff instructions were being ignored. Such a situation, he continued, should not be tolerated in the months ahead – months that required the closest possible co-operation. Harris, he implored, must be required to give a categorical assurance that he will carry out "both in letter and in spirit, the policy laid down"³⁶ in Air Staff instructions.

But Harris was not alone in his opposition to the transportation plan. General Spaatz, the United States Strategic Air Force Commander, joined in the opposition. He saw no justification for the diversion of his strategic bombers from

their *Pointblank* targets to another target system that he regarded as of dubious value. An acceptance of the plan, he argued, placed at risk the winning of air supremacy so vital to the success of planned landings on continental Europe.³⁷

Spaatz's opposition was largely based on his fear that the planned invasion would fail and that blame for that failure would be nailed to his door. Like Harris he believed that bombing could win the war and he wanted to be the bomber commander whose air power wrecked the German economy and thereby be acknowledged as the winner in the bombing debate. There was also another string to the bow of his desire. The Army Air Force for too long, he believed, had been constrained by Army and Navy influences and, like so many of his fellow officers, he sought organisational autonomy.³⁸

On 22 January 1944 the Allied Air Force Bombing Committee held its sixth meeting, under the chairmanship of Leigh-Mallory, to consider a second draft of the paper, 'Delay and Disorganisation Of Enemy Movement by Rail,'³⁹ prepared by Air Plans in AEAH Headquarters. Discussion centred mainly on the need to destroy large rail servicing centres and the timing of these attacks, rather than merely attempting to cut rail links. Zuckerman suggested that attacks begin at the earliest possible moment, but he was reminded by the Chairman, Leigh-Mallory, that an early beginning to the bombing programme might mean that any damage created could well be repaired before the landings took place. Captain C E Sherrington of the Railway Research Service, argued, on the grounds that repairs after an effective attack would take at least three months to make good, that attacks should be carried out between forty-five and seventy days prior to the landings.

The Army representatives at the meeting were not greatly enthused. Major General P G Whitefoord warned that at first sight it was not apparent to him that the plan would provide any great assistance to the armies in the critical early stages of the battles, immediately after the landings. It was his opinion that at least three or four weeks would elapse before such bombing would influence the military situation. German reserves of ammunition, food, and oil, in dumps along the coastal zone, he cautioned, were sufficient for ten days' fighting. Finally, in a somewhat grudging acceptance, Whitefoord conceded that "the plan did appear to meet the Army's requirement in the main."⁴⁰

On 1 February 1944 the plan was presented to Eisenhower. Apart from some target boundary changes to protect cover plans for the invasion, he found the plan acceptable. Leigh-Mallory objected to these changes because they meant that the electric railway systems between Paris and Le Mans, Tours and Bordeaux, were exempt from attack. These lines carried the bulk of the heavy traffic from Paris to the western seaboard, and Leigh-Mallory argued that the restrictions imposed by Eisenhower left a large gap open to uninterrupted rail movement. His criticisms were effective and, subject to the proviso that attacks on the electrified railway sections were carried out early in the bombing programme, the geographical restrictions were waived.

By early February 1944 staff at the Directorate of Bomber Operations were also becoming increasingly concerned. Their worry was that the conclusions being drawn from Zuckerman's report on air operations in Sicily and Italy could be misinterpreted if it was attempted to apply them to the vastly different conditions applicable in north-western Europe. Germany, it was believed, had few divisions in reserve to reinforce those already serving in France. Thus, the creation of a railway desert might well mean that the strategic bomber forces were being employed in attempting to counter a non-existent threat. Moreover, French marshalling yards were most often located on the outskirts of cities. Large scale attacks therefore involved the potential for heavy civilian casualties. The paper concluded that

it viewed with concern any document which can be read as giving Air Staff approval to the proposed plan at this stage. The plan itself has not been received. When it is received the Air Staff, it is suggested, should consider it with the utmost care.⁴¹

Many authorities were called upon to express opinions concerning possible targets for the embryonic transportation plan. The Ministry of Home Security was one. Their assessment was that railway marshalling yards were uneconomic targets. Destruction required considerable effort for very little return. With regard to the relative value of the destruction of locomotive sheds and servicing facilities compared with the destruction of bridges, the paper was much less emphatic. That was a decision, the paper made clear, that would have to be made by

authorities given more time to consider the problem than had been given to the Ministry of Home Security.⁴²

By mid-February it was becoming clear to Leigh-Mallory that, by his continued disagreements with the 'Bomber Barons,' he was becoming isolated from the aims of the Transportation Plan. He called a meeting at his Headquarters, ostensibly to consider the latest draft. In reality, it was an attempt by Leigh-Mallory to gather support from higher authority for his plan. Neither Eisenhower nor Portal had yet become fully committed, and Tedder, still sitting on the fence, appeared his last hope.

Early in the meeting, Leigh-Mallory lost further ground when Spaatz claimed that the plan showed an inadequate understanding of the *Pointblank* requirements. Leigh-Mallory's claim, that the German fighters would be tempted into the air in defence of railway targets, was rejected by Spaatz. He declared that he was not prepared to enter into any agreement to limit his targets: certainly not one at cross purposes to his current Directive.

Harris was typically dogmatic. The plan, he protested, was based on a fallacy. He refused to accept the proposition that rail communications could be so disturbed as to prevent military movements. He also rejected the notion that lessons from the Italian campaign could be transferred to a north-western Europe situation. So bitter was his opposition that he even offered to provide "a written guarantee that the proposed plan for interrupting the railroad communications would not succeed and that the Army would then blame the Air Forces for their failure."⁴³

Tedder, however, threw Leigh-Mallory a life-line. On Tedder's suggestion, it was agreed that a Joint Planning Committee be established with members drawn from Bomber Command, the American Strategic Air Forces, and the AEF. Their task was to draw up a plan to suit the capabilities of the forces involved.⁴⁴

Later in February supporters of the Transportation Plan suffered another set back. In a wide-ranging note to Bufton, the Director of Intelligence, previously a supporter of the Plan, expressed concern at the arrangements under consideration. He agreed that as a scheme for the destruction of railways, the plan was admirable. But he admitted to having increasing doubts whether such an offensive would make an effective contribution to *Overlord*. His argument was that

the original, modest plan had become so enlarged that the primary purpose had become submerged in the desire to create destruction.⁴⁵

Buften was spurred by this communication to express to Portal his uneasiness at the plans being made for the employment of the strategic bomber forces in *Overlord*. Firstly, the projected Joint Planning Committee, he believed, had not been properly established, and had been given no specific terms of reference. His argument was that until the Committee was given approval to operate independently, and call upon its own selected experts for advice, no planning progress was possible. He advised Portal that he intended calling a meeting with nominated railway experts, within a few days, to discuss the Transportation Plan. If the meeting agreed that the Plan was deficient in any way, then the employment of the heavy bomber forces would have to be reconsidered. In such a case a new plan would be required. Portal was invited to attend. His presence, Buften pointed out, would enable Portal to balance the soundness or otherwise of the present plan against the need for an alternative.⁴⁶

Tedder was also having doubts. In a letter to Portal he admitted:

I am afraid that having started as a confirmed optimist I am steadily losing my optimism as to how this is all going to work out . . . the so-called 'Committee' has shown no signs so far of producing any constructive results. I am more and more being forced to the unfortunate conclusion that the two strategic forces [Spaatz and Harris] are determined not to play.⁴⁷

No such meeting took place. Instead, Leigh-Mallory convened and chaired a meeting on 25 February 1944 with twenty-four participants, including six railway experts. Buften attended, but Spaatz, Major General James H Doolittle (the newly appointed Eighth Air Force Commander), Harris, and Tedder, were all missing. According to Zuckerman the meeting was not well controlled and he described it as "extraordinary."⁴⁸ It was a case, he believed, of the blind trying to lead the blind, because some of the participants had never even seen the AEAF plan. Buften's part in the proceedings was centred on his attempts to promote the usefulness of bombing attacks against bridges and viaducts. He also confirmed that he believed that efforts devoted to the attrition of locomotives had to be considered a long-term project.

The day after the meeting, Bottomley, who had not attended, provided a short summary for Portal. He had obviously been briefed by Bufton. The meeting, he protested, had clearly changed nothing. He continued:

While it was agreed that the execution of the plan could have little or no effect on the movement of strategic reserves to the battle area, the issue was confused by the Air C-in-C's contention that he had to consider the problem in terms of a period of six or nine months after the assault had taken place.⁴⁹

The difficulty, Bottomley continued, was that a bombing programme to create conditions of benefit to *Overlord* for up to nine months after the assault phase required an enormous and early diversion from the present *Pointblank* programme. He supported Bufton's call for an appropriately established committee, under Portal and Eisenhower, to consider the problems.

Churchill, who had been becoming increasingly concerned at the non-appearance of a widely accepted air plan in support of *Overlord*, finally intervened. Although in his own six volume work, *The Second World War*, he was noticeably reticent on the subject, to many others, including Eisenhower, he frequently displayed his increasing impatience.⁵⁰ In order that firm decisions could be taken, and an end put to procrastination, Churchill suggested, on 29 February, that Eisenhower should be placed in full command of all forces committed to *Overlord*. Tedder, he advocated, should prepare an outline air plan agreeable to Eisenhower, and be empowered to employ the air forces assigned to *Overlord* in the manner required by Eisenhower.⁵¹ Tedder's suggested empowerment was, no doubt, a pre-emptive strike to end Leigh-Mallory's efforts to secure control of the strategic bomber forces which Churchill had long opposed.

Eisenhower, however, evinced no great enthusiasm. He, apparently, was still to be convinced that the British were totally committed to *Overlord*. His concern was such that, on 3 March 1944, he wrote in his diary, and informed Churchill, that if agreement was not reached soon he would "simply have to go home."⁵² He had good reason to be concerned.

The vexations expressed by Eisenhower were long standing. In November 1943 Leigh-Mallory, on a visit to Washington, had warned Portal:

there seems to be a very considerable distrust of the Prime Minister over here, rising out of a feeling that, while he has agreed to the European plan which is represented by 'OVERLORD,' he is in fact making no serious efforts to implement that undertaking. I understand that the President and General Marshall feel this very strongly . . . if [General Marshall] does not get a firm undertaking that we are going to throw the maximum resources into 'OVERLORD' he will go to the Pacific, and the American forces will go with him.⁵³

Harris was equally dogmatic. Early in January 1944 he rejected any suggestion that his bomber forces should be diverted from his area bombing attacks on German cities. In his view

the bomber offensive is sound policy only if the rate of destruction is greater than the rate of repair. It is hard to estimate the extent to which Germany could recoup industrially in say a six month's break in bombing.⁵⁴

His conclusion left no room for doubt as to the part which he felt Bomber Command should play in *Overlord*. "It is thus clear" he asserted,

that the best and indeed the only efficient support which Bomber Command can give to OVERLORD is the intensification of attacks on suitable industrial areas in Germany . . . when the opportunity offers. If we attempt to substitute for this process attacks on gun emplacements, beach defences, communications or dumps in occupied territory we shall commit the irremediable error of diverting our best weapon from the military function, for which it has been equipped and trained, to tasks which it cannot carry out. This might give some specious appearance of 'supporting' the army, in reality it would be the gravest disservice we could do them. It would lead directly to disaster.⁵⁵

Later in January 1944 General Montgomery had also signalled his opposition to the broad front plan in preparation for *Overlord*. His comments, quoted in the minutes of the First Supreme Commander's Conference, could not have been reassuring. He cautioned that

in view of the enemy's strength and rate of build-up, it was essential that we obtain a quick success . . . As at present planned, he did not consider that 'OVERLORD' was a sound operation of war.⁵⁶

Moreover, Spaatz also had not given up hope in his struggle for independence. On 5 March 1944 his Headquarters produced their 'Plan for the Completion of the Combined Bomber Offensive.'⁵⁷ The preamble was a refutation of the Transportation Plan. The completion of this plan, according to the paper, would take twelve months. Even then, any significant advantages it might have achieved, would be too late to assist the invasion. The alternative offered, speedily dubbed the Oil Plan, selected for attack the petroleum industry with emphasis on petrol, followed by other targets involved in the German fighter industry. Transportation targets were nominated as targets of last resort, to be attacked only when primary targets were not available due to adverse weather conditions. This plan, Spaatz claimed, would assure air supremacy for the assault, reduce fuel supplies, and provide tactical air support.⁵⁸

Harris, pursuing his independent line, perhaps following Spaatz's lead, also refused to yield. Possibly he was buoyed by a letter from Lovett in Washington,⁵⁹ quoted earlier in this chapter, who confirmed that he supported the lines being followed by both Spaatz and Harris. He wished them both well in overcoming what he considered was a complex system of command.

On the same day as the American Oil plan was presented, a new draft of the Transportation plan appeared. It offered two alternatives. Plan A listed a total of seventy-six targets – thirty-two in western Germany and forty-four in north-west France. Plan B, the alternative, listed seventy-eight targets – six in Germany and the remainder in either northern France or Belgium. Although trial attacks on rail targets in France and Belgium had been ordered by Portal on 27 February, none had yet been carried out.⁶⁰ The problem was that little had been done to obtain the necessary clearances to attack nominated targets. With the potential for heavy civilian casualties, Portal believed that War Cabinet approval would be required. Only twenty-eight targets had been cleared.

Initially, Bottomley supported the American Oil Plan. It appeared, he asserted, to be the best plan presented to exploit the successes already gained in the *Pointblank* programme. In addition, it prepared the way for success in *Overlord*, appeared likely to produce *Rankin*⁶¹ conditions, and provided the most assistance to Russia.⁶² As for the AEF plan, Bottomley cautioned, it was satisfactory for the attrition of Germany's rail facilities, but would provide no appreciable effect on military effort for an indefinite period.

Two days later Bottomley wrote again to Portal with details of a meeting held in his office on 13 March 1944. Tedder, Bottomley, Coryton, Bufton, and four others attended. Discussion centred in the relative merits of the Transportation versus the American Oil Plan. Tedder opened proceedings by saying that it was his intention to prepare a plan by which the strategic bomber forces would best assist *Overlord*. To his mind, he declared, the American oil plan was too largely based on optimism. But the meeting agreed that if Germany could still meet her minimum rail requirements, even after the implementation of the Transportation Plan, then an alternative must be accepted. Somewhat surprisingly, in view of Tedder's opinion of the American Oil Plan, it was then confirmed that, subject to some modifications, it remained an acceptable alternative.⁶³

Although it would appear that he had not figured prominently in the latest discussion in Bottomley's office, Bufton had not been idle. Aware of the possible abandonment of the Transportation Plan, coupled with the fact that the American Oil Plan was the only viable alternative, he produced a plan of his own. Portal, he knew, was being pushed into a corner without an exit. An early, firm decision was required. It would be totally unsatisfactory if a plan of little merit was accepted simply because there was nothing else on offer. His Air Staff paper was entitled 'Note on the Employment of the Strategic Bomber Forces prior to 'Overlord'.' The success of *Overlord*, he argued, depended upon total air superiority over the *Luftwaffe* fighter force. Progress had been made, he continued, but the targets selected for attack must be those which the enemy felt compelled to defend. Bufton's nominated targets were aircraft repair depots, factory airfields, aircraft storage areas, aerodrome facilities, and personnel in those areas. Bufton agreed with the Americans and their selection of oil as an additional target system. He called for the immediate attack of twenty-seven targets within the German oil industry.⁶⁴

Portal was in a quandary. With only just over two months before the launch of *Overlord*, nothing had been decided concerning the employment of the strategic bomber forces in the coming struggle. Leigh-Mallory had requested clearances to allow attacks against transportation targets, but Portal was still not prepared to recommend to Cabinet that approval be given. The sticking point was the likelihood of heavy civilian casualties. They could only be justified if it was the German transportation system that was identified as the target. Portal's

reluctance was largely based on the disturbing estimate of civilian casualties provided by RE 8 (Research and Experiments, Department 8), a branch of the Ministry of Home Security. It was their initial pronouncement that the execution of the Transportation Plan would result in 80,000 - 160,000 French and Belgian casualties, one quarter fatal, that provided the stumbling block.

Air Vice-Marshal Edgar Kingston-McCloughry, who served as Head Planner-Air Operations in the Headquarters, AEA, places much of the responsibility for this estimate on Bufton's shoulders. Bufton, he claimed, had not only been grossly misleading in his briefing of the officials responsible for the figures, but had also not taken the trouble to become conversant with the methodology employed. He had simply called in the head of RE 8, given him a list of targets, and told him the planners required an average of four strikes per acre in the railway yards. What civilian casualties could be expected in the surrounding areas?⁶⁵

However, as Kingston-McCloughry noted, casualty calculations were fraught with difficulties. Had the population been warned? Had there been evacuation from threatened areas? Casualty surveys in England had provided a standardised formula for the number of casualties per ton of bombs released, but calculations hinged on one question: what was the population density in the target area at the time of the attack? Later calculations considerably reduced the number of civilian casualties to be expected. That was a lesson still to be learned.

Churchill, also, was becoming increasingly concerned. Time was running out. No decision had been made concerning pre-invasion bombing, and the estimates provided for civilian casualties in occupied France and Belgium were assuming frightening proportions. What effects would that have on post-war relations? Aware that Portal was still vacillating, and that a meeting was planned for 25 March, Churchill advised Portal that he eagerly awaited the conference outcome.

It was time to marshal the forces. Bufton, supported by the Director of Intelligence, nailed his colours firmly to the mast. In a succinct note to Bottomley he averred that, in his opinion "The Transportation Plan will not produce any material effect upon the course of the OVERLORD battle in the critical period D to D+5 weeks . . . as a target system . . . it has little or nothing to recommend it."⁶⁶

War Office support for the Transportation Plan was also only lukewarm. The primary object, they insisted, must remain the destruction of the *Luftwaffe*. If what they called the Railway Plan involved diversion from the primary target, they argued that it should not be approved. The employment of any surplus strategic bomber effort, they added, should be based on studies completed by SHAEF and the Joint Intelligence Committee (JIC). They suggested oil, tank production, tank depots, ordnance depots, motor transport parks, and radar systems, as possible targets.⁶⁷

Spaatz also reaffirmed his opposition to the Transportation Plan. The primary aim, in his opinion, for which he claimed unanimous agreement, was the destruction of the German Air Force and the industry on which it relied. *Overlord* required air supremacy, and the American plan fulfilled that requirement. On the other hand, the Transportation Plan put as second priority rail transportation, and it was Spaatz's opinion that this would achieve no worthwhile results. Even five weeks after the landings, he claimed, German military rail requirements could be met by utilising only a fraction of the available rail capacity. Oil was his recommendation as second priority target. He concluded his note saying that the Americans should

join with SHAEF, AEF, and the Air Staff in producing a plan for the direct tactical support of OVERLORD. This plan to provide for attacks in great strength upon communications and military installations of all kinds to assist to the maximum the initial phases of OVERLORD.⁶⁸

Harris, aware of the importance of the meeting planned for 25 March, also reiterated his opposition to the Transportation Plan. His plea was for a greater freedom of action in target selection. Bomber Command, he declared, must, with minimum diversions, "use all the force they can bring to bear against targets in Germany with a view to reducing the enemy's material power to resist invasion."⁶⁹ He called for a Directive giving him full discretion as to target selection but was prepared to permit a proviso. When forecast weather conditions "give real prospects of success against nominated targets, these will be given preference over others where chances of success are equally good."⁷⁰ The half promises

were a veil to conceal his wish to continue on his self-determined path of area attacks on German cities.

Bottomley, despite his close relationship with Bufton, advised Portal that he could not support the Director of Bomber Operations' recommendations. It was his opinion that concerted attacks on enemy transportation and railway centres would provide immediate benefits for *Overlord*. These attacks possessed the added benefit that they meant a continuation of the heavy attacks on Germany's main industrial areas. His words would have been music to Harris's ears. Adoption of the Oil Plan, according to Bottomley, meant "we should certainly be very restricted from the point of view of weather systems for choice of attacks both by day and by night."⁷¹

Tedder's views on the matters to be discussed are somewhat surprising given his pessimistic note only two days earlier.⁷² In contrast, his latest appraisal was confident and wide-ranging. It had also been long awaited. Tedder acknowledged that Allied air power was enormous, but it was still essential that the target selected for attack was within the capabilities of both tactical and strategic air forces. The oil plan, he believed, was a plan that provided long-term benefits. But, he claimed, there was no evidence that "the Oil plan can, in the short term available, seriously affect the enemy ability to meet the OVERLORD assault."⁷³ Tedder continued:

The Transportation plan is the only plan offering a reasonable prospect of disorganising enemy movement and supply in the time available, and of preparing the ground for imposing the tactical delays which can be vital once land battle is joined. It is also consistent with POINTBLANK. Since attacks on Railway centres have repercussions far beyond the immediate targets, attacks on such centres within the REICH will certainly assist in creating the general dislocation required for OVERLORD. Moreover, since the Railway system is the one common denominator of the whole enemy war effort, it may well be that systematic attack on it will prove to be the final straw.⁷⁴

It was to prove to be, in the long term, a singularly prophetic pronouncement.

The plan provided, he urged, for concentration, excellent bombing targets, and scope for flexibility. He called for the current *Pointblank* Directive to be replaced by a new *Pointblank/Overlord* Directive nominating the *Luftwaffe* and

selected railway centres in Germany and Western France as the principal objectives.⁷⁵

Although Tedder's paper was only dated 24 March 1944, it must have been available earlier because, on the same day, Bufton produced a critique. Every paragraph, except the first and third, was examined in detail. Only the final recommendation, regarding the supervision, co-ordination, and preparation of the final plan, was accepted by Bufton. His criticism was more of a call for all plans, other than that submitted by himself, to be rejected.

Bufton's opposition did not go unremarked by Tedder. In 1947 Exercise *Thunderbolt* was held at RAF Station, Old Sarum. The object was to provide the opportunity for senior officers of all Services to consider the direction and development of the air offensive from the *Casablanca* Conference, in January 1943, to the end of the war. Tedder was then Chief of the Air Staff and Marshal of the Royal Air Force. Item 14 of the exercise was a simulation of the planners' conference to discuss the air plan for *Overlord*. The day following the presentation, a discussion was held relating to the conference and Bufton was an early speaker. At the outset he admitted that he had been "one of the bitter opponents of this long-term transportation plan."⁷⁶ His first point was that he felt the demonstration the previous day had not painted a fair picture of actual events.

To take a minor point first, Bufton began, yesterday it was stated that

Bomber Command could not play any effective part in the oil plan; in fact, when the oil plan was launched Bomber Command's initial task was the destruction of the ten synthetic oil plants in the Ruhr, which was a very great proportion of the oil plan, and they carried it out very effectively; and they could have carried it out very effectively before we got on to the Continent. The other point was this. It was stated that there were two alternatives, the oil plan and the Army interdiction plan.⁷⁷

At this point Tedder interrupted. "May I take that one point on the question of fact?" he enquired. "I understood what was said yesterday was that Bomber Command said that they could not take on the oil targets because they were small. That is my recollection."

Buften replied, "I thought they said until they could get . . . " He was not allowed to complete this sentence because there was another interruption from Tedder.

Tedder demanded, "They said they could not do it. Was not that historically correct?"

Buften responded to what had clearly been a sharp exchange, reminding Tedder that "they also said they could not hit the marshalling yards in France."⁷⁸ He was then allowed to continue without further interruption.

It would seem that had Tedder not interrupted, Buften would have quoted the actual words spoken in the presentation qualifying the requirements for the destruction of the oil plants. Harris, in his letter to Portal of 13 January 1944, had confirmed that the only effective employment for Bomber Command was the continuation of area attacks on German cities. The destruction of small targets, including railway marshalling yards, was beyond the capability of his Command. Buften never adhered to that view, and by his opposition had made an enemy of Harris. It would appear that, by his opposition to the Transportation Plan, he had also made an enemy of Tedder.

Tedder, perhaps, neither forgave nor forgot. In his war memoirs he described Buften as "an habitual non-conformist."⁷⁹ Perhaps his summation should be regarded as an accolade. When did 'yes' men ever significantly advance initially unpopular causes?

In summary then, in late March 1944, but prior to the meeting on 25 March, the question regarding the use to be made of the strategic bomber forces prior to D-Day remained unanswered. The plan presented by Zuckerman and Tedder had many opponents but only two supporters. The bomber commanders were in entrenched positions with both believing that bombing could win the war. They argued that Zuckerman's plan was a misuse of the enormous air power available. Both, it appears, were seeking ways by which their force could be seen as having won the war. But time, for them, unfortunately was fast running out. Spaatz, arguing that bombing German oil could win the war, believed that if the transportation plan was adopted he would be enmeshed in bombing rail facilities while Harris, not able to be controlled, would be seen as winning the war. Portal was still undecided while the Supreme Commander, Eisenhower, remained on

tenterhooks. Churchill, regretting the non-acceptance of his Mediterranean strategy, awaited the outcome of events increasingly nervously.

In the Directorate of Bomber Operations Bufton, although appreciating the necessity of a target for the Allied bomber forces that would rouse the *Luftwaffe* fighters to its defence (and their destruction), had his own ideas of what that target should be. He was not a supporter of any form of transportation plan. Instead he sought the continuation of the attack of targets under the terms of the Directive issued on 17 February 1944. Their listed order of priority was: German Air Force; *Crossbow* installations (German V-weapon launch sites); Berlin; *Pointblank* ; and targets in south eastern Germany. In addition to this wide ranging list he suggested adding oil targets in the Ruhr, attacks on *Luftwaffe* depots, aircraft parks and repair facilities, and attacks on airfields.

Bufton was hampered, however, by the fact that by 1943 one of his primary advisers, the MEW, appeared to have lost confidence in the bombing campaign. Its problems were compounded by the fact that the intelligence gathered could very easily be misinterpreted and, while the war had vastly expanded, intelligence sources still remained inadequate. Very little concrete information was available for analysis. Staff examined photographic reconnaissance material, press and other published data, prisoner of war interrogations, and information provided by travellers and diplomats, but the true state of the German economy remained hidden. It was not until May 1944, when the Transportation Plan was well under way, that damage to land and telegraph lines caused the German authorities to increasingly utilise the vulnerable *Enigma* that the developing economic and industrial chaos in Germany was at least partially revealed. *Ultra* decrypts exposed military, industrial and economic problems all causing severe difficulties for the German authorities.

Meanwhile, preparations for *Overlord* continued. Within the higher echelons of the Air Ministry Bufton's suggestions were declared by Bottomley to be unacceptable. Oil, he agreed, would be a target that would provoke the *Luftwaffe*, but equally, transportation targets in German cities would provide a similar response. Oil, he argued, was a long term target and would not produce effective results in the short term. On the other hand, he believed that attacks on railway centres would have immediate effects. Bottomley urged the continuation

of area attacks on German cities because they created industrial devastation, dislocated transportation, and reduced German morale.

American air plans for the pre-invasion bombing programme centred on the destruction of twenty-seven German synthetic oil facilities. Spaatz argued that the German oil situation, reliant mainly on synthetic production, was critical. If the synthetic plants could be destroyed Spaatz believed that the effects would be disastrous for the German war machine. Battle field mobility would be reduced and the movement of reserves significantly slowed. The defence of oil facilities would create air battles resulting not only in further attrition for the German fighter forces but also assist in the maintenance of Allied air superiority. On the surface the American plan appeared attractive but it was identified (perhaps mistakenly) as a long term plan, and, for *Overlord*, time was not a commodity that could be wasted.

There remained only the Transportation Plan, largely prepared by Zuckerman with Tedder's support, based on an analysis of the operations and results achieved in campaigns in Sicily and Italy. It required an extensive, wide ranging bombing programme aimed at crippling the railway system over a broad area and not merely the cutting or blocking of several lines. Although it was known that line capacity in north-west Europe was extensive, it was also appreciated that the availability of heavy locomotives had been severely restricted because of their transfer to assist operations in Russia. Attacks were therefore to be directed against servicing and repair centres in north-west France and Belgium and even extending into Germany. Such an extensive programme, it was acknowledged, would require both diversion of the bomber forces and time to implement. Initially, two alternative target systems were suggested: seventy-six centres from the assault area back to the Rhine; or seventy-four centres in Belgium and France together with six centres inside the German border.

Churchill, perhaps influenced by his scientific adviser and *éminence grise*, Lord Cherwell, remained uncommitted. Cherwell was a firm supporter of the prospects offered by the bomber offensive. Churchill, wearing his military hat, but possibly regretting the diversion from his Mediterranean strategy, remained fearful of the prospects of invasion and would have eagerly accepted any other way which offered victory. Wearing his political hat he became equally concerned

regarding potential post-war problems should there be heavy loss of civilian life in France or Belgium occasioned by preparations for invasion.

But it was now late March, invasion was only two months away and still no firm and agreed plans had been decided.

Much was expected of the crucial meeting at the Air Ministry on 25 March 1944, under the chairmanship of Portal, with Eisenhower in attendance. Among those present were Tedder, Leigh-Mallory, Harris, Spaatz and his Deputy, Major General Anderson, together with Generals Kennedy, McMullen and Crawford from the War Office, Bottomley and Inglis from the Air Ministry, Noble from Intelligence, and Lawrence from the MEW. Tedder was invited to explain the nature of the bombing plan he had prepared. According to Tedder, the highest priority remained the German Air Force, including ball bearings. The question to be decided was which target system should be attacked with the strategic bomber effort remaining after the allocation of German Air Force targets. It was a long meeting during which all the major protagonists sought support for their cause. The arguments they had previously delivered on paper were now given in person.

Tedder made no great claim for his Transportation Plan and readily admitted that servicing centre and marshalling yard attacks would not mean total traffic blockage. Eisenhower, somewhat clutching at straws, conceded that the greatest contribution the air forces could make to ensure the invasion forces got ashore and were enabled to remain ashore, would be that they "hinder enemy movement."⁸⁰ Considerable discussion followed this gambit before the meeting was given the opportunity to offer alternatives.

Spaatz reminded the meeting that he had circulated his plan for oil attacks, and claimed that with both the forces and time available, attacks on the rail system would neither assist the course of the initial battle, nor prevent the movement of German reinforcements. Attacks on oil installations, he believed, would force the Germans to reduce oil consumption in order to conserve supplies. The oil plan, he continued, would weaken the German military on all fronts. It would also force the German fighters into the air in an attempt to defend installations. This, he asserted, they would do "to the last fighter aircraft."⁸¹

Portal then asked Oliver Lawrence from the Objectives Department of the MEW for his opinion of Spaatz's oil plan. It had been argued, Lawrence claimed,

that if USSTAF completed their plan of attacking 27 oil installations within a period of three months then by the time a further three months was up the Germans would have had to institute a cut of 25% in their present military consumption they had large stocks in the West so that the effect need not be immediate there would certainly be some effect noticeable in the West four or five months after the plan began.⁸²

Lawrence's pronouncement was seized upon eagerly by Portal who warned that it showed "conclusively that the oil plan would not help OVERLORD in the first few critical weeks."⁸³ It was, he conceded, a long term plan, well worth considering, and should again be examined, and possibly adopted, once the Allied forces were well established on the Continent. Eisenhower agreed. Then, albeit reluctantly, conceded "that it looked as though there was no alternative to the transportation plan."⁸⁴

Field Marshal Smuts once cautioned that "it is the greatest mistake to imagine that it is the great victories that decide wars; on the contrary, it is the great blunders."⁸⁵ Eisenhower did not greatly blunder in accepting the Transportation Plan. It was made on the advice of experts. Unfortunately, it was advice lacking in vital particulars. Although bridges were successfully attacked prior to D-day, they should have been on the programme from the beginning. Mistakenly, their value as targets had been questioned. The destruction in servicing, repair facilities, and in marshalling yards, did reduce the movement of German reinforcements, but they were not entirely prevented. Entirely prevented was, of course, an unrealisable proposition but Eisenhower's words that "it looked as though there was no alternative" was, it appears, a lukewarm acceptance of a plan on which so much depended. His hope was that German reinforcements would be forced to move at a pace so reduced that they would be in no position to influence the struggle in the early stages of the invasion. Although this aspiration would ultimately be fulfilled there were considerable risks involved: concentration on the Transportation Plan might well mean that reduction of the *Luftwaffe*, in accordance with *Pointblank* requirements, could not be achieved.

Furthermore, Eisenhower, on 25 March 1944, had been presented with but two options: oil or marshalling yards. In the case of oil there was a corollary: oil attacks would only partially have taken up the immense bombing effort available. The residual effort could have been employed in a systematic programme of

bridge destruction and the bombing of ammunition and supply dumps together with military and vehicle concentrations, as advocated by Bufton.

Unfortunately, although the subjects of oil and the Transportation Plan had been under consideration for months, neither was fully discussed at the meeting on 25 March. With the bombing forces available in April 1944 perhaps the Transportation Plan could have been combined with an oil plan but it appears that the idea was rejected, without consideration, because of the desire to adhere to one of the long-standing principles of war, selection and maintenance of the aim.

Conceivably, however, the critical error, outside Eisenhower's ambit, was that made by the oil experts. Their calculations, virtually throughout the war, were based on the amount of oil stocks the Germans had on hand, relative to the rate of military consumption. What was not done was to calculate the effects of current losses on future, reduced production. Had this been done then the somewhat bleak predictions of Lawrence would have produced a much enhanced picture, in a shorter time-frame, for reduced German military effectiveness.⁸⁶

Oil should have been the primary target, after the reduction of the German fighter forces, from a much earlier date. Harris, never a supporter of the oil bombing strategy, did have the grace to admit, post-war, that "the offensive against oil was a complete success."⁸⁷ However, as will be seen in a later chapter, even in this instance he hedged his grudging admission. But another with first hand experience of the Allied oil bombing was General Adolf Galland, the one-time Commander-in-Chief of the German fighter force. In his opinion

the most successful operation of the entire Allied strategical air warfare was against German fuel supply . . . the fatal blow for the Luftwaffe . . . it is difficult to understand why the Allies started this undertaking so late.⁸⁸

Portal, after deferring Spaatz's oil plan, sought confirmation that the Americans would be able to complete their share of the Transportation Plan in the limited time remaining. He was still clearly undecided. His lack of commitment was indicative of the indecision pervading the minds of those responsible for determining the role of the strategic bomber forces in the initial stages of *Overlord*. Eisenhower, of course, had the final say. In respect of the Transportation Plan, he suggested that "in default of any other alternative plan which would produce

greater results, he thought the present one should be adopted.”⁸⁹ Later in the same meeting it was admitted that there had been no consultation with War Office Staff regarding the anticipated reduction in German military movements, should the plan succeed. Eisenhower covered that point by confirming, “it was only necessary to show that there would be some reduction, however small, to justify adapting [sic] the plan, provided that there was no alternative available.”⁹⁰ It would appear that the grounds on which some vital decisions were made were extremely weak. Time was fast running out, but it would be another six weeks before Churchill’s final approval was grudgingly obtained so that the plans could be fully implemented.

Concern was also expressed at the meeting on 25 March 1944 regarding the possibility of French civilian casualties, and Portal suggested that, as this would be a matter of consequence for the Government, Cabinet should be alerted. It was also decided that Tedder should produce a draft directive for the senior officers concerned with the implementation of the Transportation Plan. This draft would then be discussed with the commanders and then referred to Eisenhower. Portal and Eisenhower would meet shortly after, reach a final decision, and agree upon the format of the directive to be issued. But though it may have appeared that the path had been defined, neither Harris nor Spaatz was yet prepared to yield.

As a result of the meeting on 25 March, the controlling authority for the Transportation Plan passed from Leigh-Mallory to Tedder, who was now responsible for both *Pointblank* and the strategic air operations in connection with *Overlord*. It was a rearrangement much to Spaatz’s satisfaction as he could never have co-operated with Leigh-Mallory. According to Kingston-McCloughry, Spaatz was satisfied with the outcome of the latest meeting, because he had been convinced that the Transportation Plan, coupled with the campaign against the *Luftwaffe*, provided scope for the best use of the strategic air forces. This presumed satisfaction, however, is not always borne out in Spaatz’s letters.

The first was written the day after the meeting. In a note to Eisenhower he complained that the list of transportation targets he had received from Leigh-Mallory was “a mess of potage.”⁹¹ It would result, he maintained, in the emasculation of the Eighth Air Force, and would relieve the pressure that had

been mounted against Germany. If there were political factors involved, he requested that he be informed. He concluded:

neither plan can guarantee decisive impact at the beaches in the early stages. However, we are sure that the impact of oil shortages will be felt just as soon as the reduction of railroad efficiency and will be more cumulative, positive, widespread and lasting in its effect.⁹²

Buften was next to take up the cudgels. In a letter to Coryton (now ACAS [Ops]), he expressed his disappointment at the decisions made. They had been influenced, he believed, by two misconceptions held by Portal, Eisenhower, and Tedder. The first was that the railway experts in attendance supported the Transportation Plan. They had not seen the plan prior to the meeting, Buften claimed, nor had its aim been made clear. Furthermore, the issue had been confused by Leigh-Mallory's insistence that the problem had to be viewed in terms of a period of six to nine months, post-assault.⁹³

Secondly, Buften questioned the argument put forward at the meeting that bombing rail centres in the preparatory phase would result in canalisation and, as a consequence, ease the tasks of the air forces in cutting the few remaining critical lines after the landing. "All railway experts agree" he declared,

that insofar as the re-establishment of through running lines is concerned a marshalling yard is the one place where this can be most rapidly accomplished. This is confirmed by experience obtained in recent attacks. Thus, even if the Plan is applied, the number of routes available to enemy traffic will to all intents and purposes be the same on D. Day as at present strategic attacks on railway centres will not reduce the task confronting our air forces when the tactical plan is launched.⁹⁴

Unfortunately, it seems that Buften had mistakenly assumed that where the plan called for attacks on 'railway centres' that meant 'marshalling yards'. His misapprehension was doubly unfortunate in that marshalling yards in the French and German situation were vital elements in maintaining efficient rail traffic flow. The repair of lines to enable single track rail movement through marshalling areas is easy but the smashing of a marshalling yard prevented the loading and

organisation of freight trains. Both rail centres and marshalling yards were critical targets in the Transportation Plan.

On 29 March 1944 Portal advised Churchill that the Transportation Plan had been accepted as “the best way for the strategic bombers to pave the way for a successful OVERLORD.”⁹⁵ Their primary target remained, however, the German Air Force. A draft directive was enclosed for Churchill’s approval. Once it was approved, Portal acknowledged that he would sign it on behalf of the Combined Chiefs of Staff and it would come into immediate effect. But he added a warning: the planned attacks on railway centres in occupied territories could result in very heavy civilian casualties. Eisenhower was aware of the problem, Portal understood, and had suggested that warnings to move be given to those living near rail centres.

This letter also made clear to Churchill that the Transportation Plan would not interfere greatly with Bomber Command’s assault on German cities. It was certainly Harris’s understanding because he had been noticeably reticent. It also must be remembered that at this time the ball bearing arguments were only just concluding; his Command had been badly mauled over the winter months in the Battle of Berlin; he was concerned at the lack of publicity afforded his Command; and he was about to begin another argument with Portal concerning Bufton and the formation of the Path Finder Force, one going back to 1942, and detailed in an earlier chapter.

Early in April Churchill advised Eisenhower that the Cabinet was becoming increasingly concerned at the possibility of heavy civilian casualties following attacks on French railway centres. He pointed out that the Defence Committee was to consider the matter that week, and that the Foreign Office would be in contact with their American counterparts. Finally, he informed Eisenhower that he would be sending a personal telegram to Roosevelt.

On 5 April 1944 a meeting of the War Cabinet Defence Committee was convened under Churchill’s chairmanship. It was held in the Defence Map Room, an underground, bomb-proof room, now preserved in its war-time state as a monument and tourist attraction, with an entrance opposite St James’s Park. It was a large meeting in a small room and, at times, the atmosphere must have been very tense. As usual, with many of the meetings when Churchill was involved, (they were often called his ‘midnight follies’), it did not begin until 10.30

pm. Among those present were Lord Cherwell, Zuckerman, Tedder, Leigh-Mallory, senior naval and military commanders, various Departmental Ministers and Bottomley and Bufton.

Churchill opened proceedings by reading from a briefing script prepared by Cherwell. The meeting had been called, Churchill began, to consider the consequences of heavy civilian casualties as the result of pre-invasion bombing, and because serious misgivings continued to be expressed regarding the soundness of the Transportation Plan. All were aware, he continued, that Leigh-Mallory knew nothing about bombing, or the particular merits of the proposed plan. Although Churchill feigned not to know of Zuckerman's presence, he declared that the plan was "the brain child of a biologist who happened to be passing through the Mediterranean."⁹⁶ At this point Portal remonstrated at the unfairness of the remark. He pointed out that Zuckerman had done more than any other individual in the analysis of the effects of air operations. Cherwell, no friend of Zuckerman, made a tentative attempt to recover his brief from Churchill, but the Prime Minister, after a glance around the room, continued his reading. At the end he turned to Tedder and asked if he supported the plan. Tedder admitted he did.

"You don't know a better plan?" queried Churchill.

"There is no better plan," said Tedder.

"I'll show you a better plan," responded Churchill.

Following this sharp exchange Zuckerman recalled that he "saw Tedder's knuckles whiten as he grasped the edge of the table. He knew better than I what the next few hours were going to bring."⁹⁷

The Transportation Plan, Churchill continued, had to be considered from two perspectives. Firstly, was it militarily sound, and secondly, what were the political consequences of heavy French civilian casualties. Portal weighed in at that point declaring that he not only supported, but was prepared to accept responsibility for the plan. He admitted that he had not always been a supporter, but had been swayed by the arguments of Tedder and Zuckerman, and the results achieved in the Mediterranean theatre by the bombing of communication targets.

Tedder then confirmed his support for the plan. He skated over the question of possible French casualties, rejected the oil plan, and conceded that supply dumps and military camps would be included in target lists for the tactical air forces nearer D-day.

Buften, probably the most junior officer present, was then asked by Churchill to give his views. He was introduced by Portal who advised that he was well aware that Buften's views were now utterly opposed to his own. Buften, he confirmed, was at liberty to give full range to his thoughts, but they were only applicable within the Map Room. Beyond those four walls, he continued, Buften was simply a member of his Air Staff and would apply the policy determined by his superiors.

As a very junior officer among exalted company, Buften soon made clear that he was not intimidated by the situation. As Zuckerman noted, Buften "certainly did speak freely."⁹⁸ His arguments followed closely those detailed in his alternative plan. Surplus air effort, Buften proposed, should be directed against air parks, factory aerodromes, repair facilities, operational night fighter aerodromes, large training centres, and ammunition dumps. In his opinion there were sufficient targets in that grouping to occupy the spare bomber effort until such time as the strategic bomber forces were called upon to participate in the attack of key enemy communications.

Discussion then centred largely on the question of possible civilian casualties. Portal made the point that the original estimates may well have been in considerable error. No allowance had been made for possible evacuations from threatened targets; earlier calculations had assumed that all bombs released would cause casualties; bombing effort was less than that originally calculated;⁹⁹ and civilians, only slightly injured, were excluded from the total of possible casualties.

Churchill, in closing the meeting, indicated that no firm decisions were required at that stage. It was surely a remarkable understatement with the planned D-Day now less than nine weeks away. He affirmed that attacks on rail centres, where the risk to civilians was small, were to continue. Tedder was also invited to discuss with Portal the possibility of revising his plan with a view to eliminating those targets of lesser importance where the risk to civilians was high. Tedder was then to advise Eisenhower the results of these discussions.

It was, perhaps, after this meeting, that Buften was told by Bottomley that the Prime Minister wished to speak to the 'little Air Commodore.' Churchill asked Buften if he had recently been in any accident. Buften, somewhat surprised, rejected the suggestion and then asked the reason for the question. Churchill, in a

humorous aside, then intimated that, because Bufton did not appear always to agree with his senior officers, there was always the danger he might get run over by a bus. Aware that Bufton's outspokenness could well place his appointment at risk, Churchill offered to make it an order that Bufton report personally to him once a fortnight to make certain that he had not been removed. Bufton thanked him for his concern, but declined the offer.¹⁰⁰

Bufton was not one to readily yield. With no sign of a firm decision on pre-invasion strategic bomber operations, and time passing, he made another attempt to sway opinion. On 10 April 1944 he submitted a revised 'Plan for the Employment of the Strategic Bomber Forces Prior to Overlord.' His first point was that he believed that attritional attacks on seventy-eight marshalling yards would have no effect on *Overlord* within the period D-Day to D+5 weeks. Secondly, he argued that acceptance of the Transportation Plan was based on the misapprehension that the canalisation achieved would have 'some' effect in the same critical five week period. He admitted there might be benefits from attacks on marshalling yards, but argued they would not result in the canalisation of rail traffic.

Bufton claimed that his alternative plan would provide greater and more direct support for Overlord in the first five weeks than would the attack on seventy-eight marshalling yards. He listed three target systems. First, he nominated the complete *Luftwaffe* operational maintenance system in France, Holland and Belgium. Second, the purely military targets suggested by army authorities. These included military camps, ammunition dumps, motor transport, petrol dumps, and ordnance depots. Finally, he provided a list of twenty-six road and rail bridges. Their destruction, he claimed, would result in the canalisation of enemy traffic which was the non-achievable aim of the planned marshalling yard attacks.

In concluding this paper, Bufton argued that its acceptance would very considerably reduce the likelihood of heavy civilian casualties. Had this plan been available on 25 March, he believed, "consent to the Transportation Plan would not have been given."¹⁰¹

On 12 April 1944 the Defence Committee held its fifth meeting. It had been called to consider a letter from Portal recommending that the Transportation Plan be formally approved. Portal's letter included a revised target list, but excluded two targets in the Paris area where heavy civilian casualties had been anticipated.

He added a proviso that their attack might still have to be undertaken at the time of the initial landings. His letter also contained revised data on the number of civilian casualties to be expected in completing the Transportation Plan. These were now reduced to 10,500 killed and 5,500 seriously injured. The objective of the Transportation Plan, wrote Portal, was the progressive dislocation of the enemy controlled railway system. It was the essential preliminary to the actual assault. He concluded:

Only if the railway system feeding the Neptune¹⁰² area has already been carefully disorganised can it be hoped at the time of the assault effectively to interfere with the enemy's movement and concentration, and so gain the time which will be a vital factor in the opening phases of the campaign.¹⁰³

Portal and Tedder were now clearly in full agreement because Portal's conclusion was virtually a copy of a note that he had just received from Tedder.¹⁰⁴

Although the Transportation Plan had still not been approved by Churchill and the War Cabinet, the administrative machinery had been set in motion and wheels were turning. It had been agreed by the Combined Chiefs of Staff that once Portal and Eisenhower had jointly approved the air programme for *Overlord*, control of the strategic bomber forces would pass to Eisenhower. On 13 April, Portal advised Eisenhower that on the following day he was to assume direction of all Air Forces operating out of England. Approval was still awaited for the attack of certain targets, he admitted, but the plan was generally agreed. Spaatz was advised to seek future directions from Tedder, designated by Eisenhower as responsible for all air operations connected with *Pointblank* and *Overlord*. Harris received a similar letter from Bottomley, couched in identical terms.¹⁰⁵

The Directive issued to Harris and Spaatz on 17 April 1944 was a rambling document that lacked the precision evident in the paper issued by Tedder on 24 March.¹⁰⁶ Although drafted in the Air Ministry under Bottomley's instructions, it had been issued on Tedder's orders and pre-empted Churchill's acceptance of the Transportation Plan. The copy for Bomber Command was issued over the signature of Lieutenant General Walter Bedell Smith (Eisenhower's Chief of Staff), and counter-signed by Air Vice-Marshal James Robb, Deputy Chief of Staff (Air) at SHAEF. It ignored the differences of opinion that existed between Tedder and Spaatz while at the same time providing tacit acceptance of the earlier views

expressed by Harris as to Bomber Command's supposed limitations. These views, it must be noted, had already been disproved by the outstanding successes achieved by Bomber Command in their experimental attacks on railway facilities at Trappes, Le Mans, and other targets in France. Furthermore, Bomber Command had shown, when Oboe was available, it was a weapon of precision. Portal had been vindicated in his refutation of Harris's claim that his force was a bludgeon and not a rapier. To cover possible civilian losses in occupied territories, the Directive had included a specific paragraph. "The political aspects of this plan, as affecting the French, " it read, "will be kept under continuous supervision, with especial reference to the casualties to the civilian populations involved."¹⁰⁷

Perhaps the critical section of the Directive was contained in the sixth paragraph. This made clear that

the list of targets best calculated to achieve the primary objective will be passed to the Supreme Commander by the Air Ministry. The list of targets chosen to achieve the secondary objective and the relative priorities . . . will be issued separately.¹⁰⁸

In other words, air operations were now under divided control. Two separate air planning organisations existed side by side. Tedder in SHAEF was responsible for planning strategic operations against communications, while Leigh-Mallory was responsible for tactical operations. Meanwhile, the Air Ministry continued to be responsible for targets and priorities within the *Pointblank* programme.

Opposition to the Directive came not as would be expected, from Spaatz or Harris, but from Churchill. On 19 April the Defence Committee held its seventh meeting. A possible catalyst was the criticism mounting in both the French and Belgian press of recent Allied bombing of transportation targets. Although civilian casualties were lower than revised Allied estimates, and the German propaganda machine curiously reticent concerning the deaths of French and Belgian civilians, Churchill continued to express his doubts. He took no pleasure from either the claim that large numbers of Germans had been killed, or that twenty-three of the seventy-eight listed targets had been attacked, at little or no cost.

In closing the meeting, Churchill affirmed that he was prepared to support a continuation of the Transportation Plan for a further week. In doing so, he admitted that the delay strengthened the case for attacks on railway centres because time was running out. His decision did not meet with warm approval.

Instead, Air Staff members present, together with the First Sea Lord, were now joined by Field Marshal Sir Alan Brooke, Chief of the Imperial General Staff, in calling for a clear and unequivocal decision. War Cabinet members continued their condemnation of the Transportation Plan, but the Chiefs of Staff argued that, having gone so far, it was impossible to turn back.¹⁰⁹

One week later, on 26 April, the Defence Committee met again. Zuckerman attended and has provided his views on Churchill's conduct. "I was used to the atmosphere of the meetings" he confessed, "with Winston seemingly amiable at the start but becoming increasingly hostile and domineering, with tension rising in the room as the meeting continued into the early hours."¹¹⁰ Although the majority of Service chiefs and Ministers present urged that the Transportation Plan be fully implemented, Churchill still refused to give his approval. He continued to have doubts concerning both the efficacy of the Plan, and the loss of French and Belgian lives that it entailed. Three days' later, on 29 April, Churchill wrote to Eisenhower suggesting that the Transportation Plan be abandoned. He offered a compromise bombing programme for Eisenhower's consideration.

This alternative, according to both Kingston-McCloughry and Zuckerman, appeared to have been drafted by Cherwell under direction from Bufton.¹¹¹ It was a reaffirmation of the plan he had submitted on 10 April. A target list should be drawn up for this amended programme, Churchill urged, where not more than one hundred French lives would be lost during any one attack.

Eisenhower's response was measured. Firstly, he consulted Leigh-Mallory, who confirmed his belief in the Transportation Plan. Abandonment at this stage, he protested, would mean a greatly increased tactical problem when dealing with enemy mobility. He also pointed out that attacks on naval targets, Army bases, and communications centres, would offer the potential for civilian deaths. His final point was that too large a number of targets, scheduled for attack immediately prior to D-day, might well mean that adverse weather could prevent completion of the tasks.

Eisenhower's reply to Churchill, drafted by Tedder, was dated 2 May 1944. Tedder pointed out that civilian casualties were an integral part of the full employment of air power. They had occurred during attacks on U-boat bases and factories, and would occur again when legitimate targets such as railway centres

were bombed. Tedder's note, very little changed when transcribed by Eisenhower, went on to say that the object was to so

weaken and disorganise the railway system as a whole, that, at the critical time of the assault, German rail movement can be effectively delayed, and the rapid concentration of their forces against the lodgement area prevented. Time is the vital factor during the period immediately following the assault.¹¹²

Eisenhower, clearly, was not going to be moved by the possibility of French or Belgian civilian casualties because of his military requirements. He asserted that he well understood the political implications of civilian losses during the pre-landing bombing. He also agreed, where possible, to modify the Plan to reduce the chance of civilian deaths. This, however, could only be done to the extent that the Plan's value was not reduced. Furthermore, he continued, if it was acceptable in principle that targets in France could not be attacked because of the risk to civilians, then "the perils of an already hazardous undertaking would be greatly enhanced."¹¹³ As far as he was concerned, Eisenhower concluded, the Transportation Plan was the only viable option.

Perhaps because of Churchill's support, but certainly from his own strongly-held beliefs, Bufton, on 2 May 1944, produced his modified plan, first suggested on 10 April, for the employment of the strategic bomber forces prior to D-Day.¹¹⁴ As far as the *Luftwaffe* was concerned, most targets were already identified in the prepared plans. However, the Army representatives, when the revised plan was considered on 3 May, did not look with any great favour at the suggested military targets. His bridge targets were much more favourably received, particularly by Brigadier-General Charles P Cabell, an American representative. He offered to conduct an experimental attack on six bridges, but his offer was vetoed by Spaatz.

At this same meeting on 3 May, Tedder took the opportunity to strongly attack Bufton's plan. He cited his experiences in North Africa where, he claimed, despite the delays and inconvenience caused by the destruction of forward repair facilities, the German Air Force had remained an effective fighting force. Unlike Cabell, Tedder saw no value in substituting bridges for railway centres. Bridge repairs, cautioned Tedder, could on average, be completed within fourteen days. For that reason, he concluded, it would be necessary to confine bridge attacks to

the fortnight period prior to the landings, if the planned landing areas were to be kept secret.¹¹⁵

Tedder's last claim was, of course, fallacious. The pre-assault bombing programme was designed to prevent the enemy being able to identify the planned landing area. Targets both inside and outside the effective operational areas were to be attacked to maintain the secrecy of the Normandy beaches. For every gun emplacement attacked within the assault area, there were two others bombed that were outside. Three bridges across the River Meuse, planned for the trial, were examples of the diversionary tactics employed.

Churchill closed this meeting on a familiar note. A paper was to be prepared to be sent to the American State Department advising that the Transportation Plan, considered essential to the success of the invasion, could result in the deaths of up to 10,000 French civilians. Significantly, he did not use the revised number of civilian casualties that he had received. He also advised that he would send a similar message to Roosevelt. An assurance was to be sought from the American Government that they were prepared to acknowledge the joint responsibility for the actions planned. Tedder was told to examine the plan to ensure that the number of civilians killed prior to D-Day did not exceed 10,000.

The invasion was now but a little over four weeks away. Opinions among those responsible for the venture, however, remained bitterly divided. Despite all the discussions at the highest levels no specific plan had met with unanimous approval. Even the bomber commanders, Harris and Spaatz, disagreed as to the best employment for their forces in the forthcoming struggle. Eisenhower and Portal had accepted Zuckerman and Tedder's Transportation Plan merely on the grounds that it offered the prospect of providing limited assistance to the invading forces and that there appeared to be no alternative. But even the Transportation Plan had its limitations and still required elaboration. Many discussions that had taken place were based on faulty understandings of the requirements necessary for a successful campaign and an incomprehension of what the bomber forces could actually achieve. Importantly, as far as the British forces were concerned, Churchill had still to provide his approval. It was a fraught situation and time was running out.

The destruction of both rail and road bridges played a significant part in the results achieved by the Transportation Plan. Zuckerman, in a speech in 1988, claimed that his focus for the Allied interdiction campaign had been to destroy enemy movement. Whether that required the destruction of bridges, cutting railway lines, or the strafing of soldiers on foot, had not been his particular concern. The aim, as he described it, was to destroy movement,

interrupting it as far back as possible . . . the easiest and quickest ways. But all those ways were relevant and in the OVERLORD plan of bridge cutting there was a coherent plan. The OVERLORD plan . . . included the destruction of bridges but at the right time.¹¹⁶

Ultimately, of course, bridges had been included in the Transportation Plan, but their inclusion had not been at the instigation of authorities in SHAEF. They were included very late in the proceedings and only after considerable argument. Zuckerman, in his Report on air attacks against communication targets in Sicily and southern Italy had argued: "Railway and road bridges are uneconomical and difficult targets, and in general do not appear to be worth attacking except where special considerations demand it in the tactical area."¹¹⁷ Furthermore, as late as April 1944, in a paper prepared by the Enemy Objectives Unit of the United States Economic Warfare Department identifying twenty-six bridges as potential targets, neither Tedder nor Zuckerman were sufficiently provoked to respond.¹¹⁸

Buften, on 2 May 1944, also nominated twenty-six bridges as targets but at a War Cabinet meeting the next day, with Buften in attendance, Tedder evinced no particular interest. In response to a suggestion by Cherwell relating to suitable targets to prevent enemy movement, Tedder pointed out that

for every bomb that hit a bridge, a large number missed and misses were of no value whatsoever. On the other hand, in attacks on railway centres, every bomb which fell within the area of the centre did some damage of military value. Furthermore, bridges could be repaired relatively quickly.¹¹⁹

The same day as Tedder also deflected suggestions that bridges were potentially useful targets, Zuckerman at a meeting at SHAEF Headquarters did

much the same. The proposal was that railway bridges should be included in the Transportation Plan provided it was deemed technically practicable. Zuckerman, less than enthusiastic, asserted that “the result achieved depended on the structure of the Bridge, and the type of bomb employed. For this purpose nothing less than the 1,000lb bomb would be suitable, and preferably the 2,000lb bomb.”¹²⁰

Colonel Richard D'Oyly Hughes, a former British army officer who had become an American citizen in the early 1930s, a founder member of the American Enemy Objectives Unit from 1942 to 1944, and senior target planning officer for the United States Air Forces, however, has provided another insight into the Zuckerman/bridge controversy. Zuckerman, he protested, was driven by personal ambition and clearly

no plan was of any use to him that was not obviously personally his . . . with no other planners participating . . . What credit was to emerge he felt must be his alone. Unlike the rest of us, who were only interested in the best plan, regardless of who participated in the making of it, Zuckerman was at all times prepared to sacrifice integrity for personal florification [sic].¹²¹

Hughes went even further. Leigh-Mallory, he insisted,

prodded by his Svengali, Solly Zuckerman, and with Air Marshall [sic] Tedder playing the part of the wicked uncle in the wings, advocated that for a lengthy period of time, both prior to and after D-Day, all strategic bombing, as such, should be discontinued . . . and that all this weight of effort be exclusively devoted to attacks on the railroad systems of France and Western Germany.¹²²

Although Hughes had somewhat overstated the case, this led, he continued, to a bitter argument over air planning. The disagreement was not one between British and American authorities as might have been supposed, but rather between United States Strategic Air Force Headquarters, Air Ministry, and Bomber Command, all in England, on one side and SHAEF Headquarters (British and American staff), in Europe, on the other.

As we have seen, Eisenhower compromised: bridges and oil both became targets prior to D-day and provided invaluable returns.

In the meantime, Eisenhower, on 5 May, removed the embargo he had placed on a number of railway targets that appeared likely to create heavy loss of life among civilians living nearby. But he also ordered that the first targets to be attacked were those where the lowest number of civilian casualties were likely to be incurred. Targets where heavy civilian losses could be anticipated, were to be attacked last, and as close to D-day as was possible.

On 6 May, Leigh-Mallory reviewed the progress of the Transportation Plan with senior air commanders. His main purpose, it seems, was to goad the Americans into increasing their bombing effort. Bomber Command, he pointed out, had attacked thirty-two of thirty-eight specified targets. From a list of twenty-three, the Eighth Air Force had bombed only eight. As for the Tactical Air Forces and the American Ninth Air Force, they had attacked eleven of their seventeen allocated targets. Leigh-Mallory also reminded those present that the British War Cabinet now accepted the necessity of bombing railway targets. The last to be bombed would be those where high civilian losses could be anticipated.

He also agreed that it would be worthwhile to employ medium and fighter bombers of the Tactical Air Forces in attacks on bridges. Echoing Bufton, he suggested bridges over the Seine as potential targets, with others crossing the Meuse as diversions. Leigh-Mallory admitted that bridges were difficult targets, and while he did not want to see wasted effort, he still considered the experiment to be necessary. He was supported by Air Marshal Sir Arthur Coningham, the Commander of the Second Tactical Air Force (2nd. TAF).

On 7 May Churchill telegraphed Roosevelt. He pointed out to the President that although every care would be taken to prevent civilian deaths, both he and the War Cabinet were apprehensive of the effects that would be created in France as a consequence of pre-D-day bombing. He called for an inter-Government agreement on the planned bombing programme, remembering that the slaughter would be among friendly civilians supportive of the Allied cause. Churchill also had another concern. He had, he considered,

been careful in stating this case to you to use only the most moderate terms, but I ought to let you know that the War Cabinet is unanimous in its anxiety about these French slaughters, even reduced as they have been, and also in its doubts as to whether almost as good military results could not be produced by other

methods. Whatever is settled between us, we are quite willing to share responsibility with you.¹²³

It could be inferred from this that Churchill remained unconvinced of the prospects for *Overlord* and perhaps still hankered after the Bufton or other alternative.

Roosevelt replied four days later. He admitted that he fully shared Churchill's distress at the possible loss of French lives. Equally, he appreciated that every endeavour would be made to minimise casualties. Adverse French public opinion was to be guarded against, but not at the expense of reducing military effectiveness. His conclusion was decisive. "However regrettable the attendant loss of civilian lives is" he advised,

I am not prepared to impose from this distance any restriction on military action by the responsible commanders that in their opinion might militate against the success of 'Overlord' or cause additional loss of life to our Allied forces of invasion.¹²⁴

On 16 May 1944, three weeks before D-day, Churchill advised Eisenhower and the Chiefs of Staff that the War Cabinet had decided to let matters rest with regard to civilian casualties. In a minute to Eisenhower and General Ismay for the Chiefs of Staff, he indicated that it appeared to him

that we shall be able to keep well inside the 10,000 limit of French killed before D-day. Therefore I believe the Cabinet will be content not to press this matter further The President's message leaves the matter in the hands of 'the responsible military commanders,' and I suggest that the matter should be dropped.¹²⁵

Although Churchill had told both the Chiefs of Staff Committee and Eisenhower that arguments over possible French casualties were at an end, he still kept the casualty numbers, forecast and actual, under constant review. On 23 May Tedder, in response to a question from Churchill, assured the Prime Minister, using German reports, that French casualties were about forty per cent lower than had been expected. Churchill's response was that the Transportation Plan should proceed, but that where possible the civilian populations should be warned of forthcoming attacks.¹²⁶

With time fast running out, approval had earlier been given to Bomber Command to begin limited marshalling yard attacks in March 1944. The first was on the night of 6/7 March 1944 when 351 Halifaxes and six Mosquitoes bombed the marshalling yards at Trappes. An early start to the programme was essential because some eighty marshalling yards and servicing centres had been nominated as targets for the three strategic bombing forces, with the prospects of weather always being a possible limiting factor. Bomber Command was given thirty-seven targets, and from the first attack on Trappes until the end of May 1944, had carried out a total of fifty-four attacks on transportation targets. Indicative of the effort applied, just under thirty-nine per cent of the total bombing effort for the period was employed in bombing railway targets.¹²⁷

These attacks were carried out by Bomber Command using Oboe, or the improved Oboe called *Album Leaf*, to provide ground marking. The raids were controlled by a Master Bomber, and were remarkably successful: certainly to the surprise of Harris who threw himself enthusiastically into the programme. Harris continued to operate seemingly willingly with SHAEF, but still resented what he identified as Air Staff interference. Spaatz, however, continued to hold his forces in check. But, despite their slow start, the Eighth and Fifteenth Air Forces played their part in the Transportation plan. By 3 June 1944 Leigh-Mallory was able to state at the Fifth Allied Air Commander's Conference that "the strategic phase of the Railway plan could now be considered complete and that the tactical phase had now begun – direct attacks on lines and rolling stock by fighter/bombers."¹²⁸

Despite their earlier rejection by Zuckerman, Leigh-Mallory, and Tedder, road and rail bridges had become targets in the Transportation Plan by 7 May 1944. As recently as 1 May, Leigh-Mallory in a letter to Tedder, had confirmed that

It has been suggested that 5 bridges over the River Seine should be destroyed by bombing, but in view of the heavy expenditure of effort that would be involved (6,000 short tons) and the fact that the lines could be cut at other points (e.g. embankments), for a smaller expenditure of effort, this commitment can be included . . . only if the effort can be spared from other essential commitments.¹²⁹

The *volte-face* was occasioned by an experimental attack carried out on a road bridge over the River Seine at Vernon on 7 May 1944. The successful attack was carried out by twelve P-47 Thunderbolt fighter/bombers each carrying two

1,000 pound bombs. The photographs available the next day were proof enough that bridge attacks were a viable and economic proposition. By D-day, eighteen road and rail bridges between Rouen and Paris had been destroyed, and a further three considered impassable. Furthermore, twelve bridges over other rivers were either blocked or destroyed.¹³⁰

Oil, despite having been rejected as the primary target for pre-D-day bombing, also made an early return to the bombing programme. On 17 March 1944 General Arnold, Commanding General of the United States Army Air Forces, told Spaatz that he had no objection to attacks being launched against oil targets at Ploesti. Aware that this permission cut directly across *Overlord* planning, subterfuges were employed. Ostensibly, the attack launched on 5 April 1944 was directed at railway marshalling yards in the vicinity of oil facilities. It was thus accepted as an attack on communications. As the American Official history stated, “‘incidental’ damage . . . occurred, and to a very encouraging extent.”¹³¹ The oil question is considered in detail in the next chapter.

Immediately prior to the D-day landings, anxiety was still being expressed at the possible failure of marshalling yard attacks to curtail enemy movement. A report by the Sub-Committee of the Joint Technical Warfare Committee (the Ellis Committee) noted with concern that the tactical effects of the attack on marshalling yards would be much smaller than Professor Zuckerman predicted.¹³² The concern was that Zuckerman, a member of that committee, had used the power of veto to prohibit the publication of what had been an otherwise unanimous, official report. Zuckerman was unable to reconcile himself with the report, and was invited to provide a minority statement. The disagreements continued, and it was then decided the arguments would be re-examined post-*Overlord*.

By 6 June 1944 of the eighty nominated Transportation targets fifty-one had been “damaged to such an extent that no further attacks were necessary until vital repairs had been made.”¹³³ Another twenty-five targets, although severely damaged, still required additional attacks while the remaining four had received little if any damage. The dominant force had been Bomber Command which had bombed thirty-seven targets while the Eighth Air Force, late in starting, attacked twenty-three and the Tactical Air Forces sixteen. Spaatz, perhaps never totally committed to the Transportation Plan, somewhat reluctantly carried out the major portion of the task allotted to the Eighth Air Force but Harris, surprisingly, became

almost enthusiastic. Much to his astonishment Bomber Command had been particularly effective and a creeping paralysis had spread over the rail network west and north of Paris.

On 28 June 1944, Bufton added a fourth column to the table initiated by Leigh-Mallory on 27 January 1944 as proof, in his opinion, that Bomber Command had achieved more than Harris had believed was possible in the pre-invasion bombing, and even more than Leigh-Mallory had requested as essential for the success of *Overlord*. Although the force had been developed as an independent strategic arm, he argued, this did not mean that its efforts should be restricted to the attempted destruction of industrial centres. The specialised equipment provided, and the operational techniques employed, were designed to enable the force to place their bombs accurately on the target – any target. Bufton rejected many of Harris's earlier claims because, as part of the Air Staff's long term plans, he now believed that Bomber Command was approaching, or had attained, the position where it could now carry out accurate precision bombing by night.¹³⁴ Harris, from the evidence of his later actions, however, appeared unable to accept that there was more to gain from precision attacks than there was from his area bombing of German cities.

Before moving on to examine the post-invasion activities of the strategic bomber forces, mention must be made of the vital role played by the Tactical Air Forces before and after D-Day. When the AEAFF came into being in November 1943 under Air Chief Marshal Sir Trafford Leigh-Mallory it comprised three components: a tactical arm, the American Ninth Air Force; the tactical arm of what had previously been known as Fighter Command but was now identified as the Second Tactical Air Force (2nd TAF); and the remaining squadrons of Fighter Command fitted into a new organisation called Air Defence of Great Britain. The Second Tactical Air Force was made up of three groups totalling fifty-six squadrons of Mosquitoes, Bostons, Mitchells, Typhoons, Spitfires, Hurricanes, Mustangs and Austers. Air Marshal Sir Arthur Coningham was appointed Air Officer Commanding-in-Chief of the Second Tactical Air Force.

Coningham had served in the Western Desert since October 1941 and in March 1943 had been appointed AOC, North African Tactical Air Force. He had thus seen many Army commanders come and go and with them had suffered many set-backs. Initially, the arrival of Montgomery as Commander of the Eighth

Army in August 1942 had appeared to Coningham to be a good omen. The favourable impressions faded rapidly however, and the fault was not necessarily one-sided. Coningham had been the final authority in the desert for some time and he was not willing to readily abdicate that position to a newcomer. Both were ambitious and to some extent publicity seekers. When selecting his team for the invasion of Italy Montgomery observed that Coningham “is a dangerous man being of a highly jealous nature and not to be trusted to ‘pull’ in the team; he is out for himself.”¹³⁵ Nevertheless, whatever his shortcomings, Coningham was well aware of what the army required of the tactical air forces and was well suited for his appointment to the Second Tactical Air Force for *Overlord*.

The primary aim of the 2nd TAF was to achieve air superiority and thus allow ground support, bombing, and reconnaissance operations to operate freely while denying similar conditions for enemy air units. As in the desert, the other task for Coningham’s force was to provide Army air support as and when required. Coningham early realised that although many of his pilots were fully conversant with the requirements of, and operationally experienced in, fighter combat, there were others totally unfamiliar with the requirements for air to ground operations. A rigorous training regime for air/ground gunnery, dive bombing, and the use of rocket projectiles, was immediately instituted. Early in this training period Coningham had recourse to appeal to Eisenhower when he argued that his force was being called upon to provide fighter escorts for Spaatz’s heavy bombers while Eighth Air Force fighters sat on the ground. Eisenhower agreed with Coningham but the outcome did not necessarily improve relations between Spaatz and Coningham.

Coningham, like many others, also had his problems with Leigh-Mallory. In May 1944 Leigh-Mallory sought to bring the medium bombers of the Tactical Air Force under his control. Coningham objected. His argument was that if Montgomery called for direct support which the fighter bombers could not provide, then the medium bombers would be required. Divided control, he argued, was unworkable and he advised Montgomery of the potential problem. Montgomery’s reaction was as Coningham anticipated. Montgomery immediately made clear to Eisenhower that he was unable to deal with two air commanders whose roles clearly overlapped. On 19 May 1944 Eisenhower ordered that Coningham be accorded “the necessary executive authority to implement all requests for air

action required by the Army and Leigh-Mallory was merely to exercise general direction of air operations.”¹³⁶

The ruling placed Leigh-Mallory in an invidious position. Although nominally responsible for the success of the air plan associated with *Overlord*, he had been reduced to a position where he simply countersigned decisions made either by Tedder in the case of the heavy bombers, or Coningham in the case of the Second Tactical Air Force.

Pre-invasion tasks for the Second Tactical Air Force, beginning in April 1944, had focussed mainly on railway workshops, marshalling yards and bridges. By May the target list had broadened considerably to include coastal radar sites, airfields, night fighter director stations and locomotives and rolling stock on the French railway network. Their wide-ranging efforts were an invaluable supplement to the work of the bomber forces.¹³⁷

On the night of 15/16 June 1944 the first flying bombs landed in London and it became clear that both the strategic and tactical air forces would have to be involved in an effort to counter the assault. It was a worrying diversion and concern increased after the first heavily camouflaged launch sites had been overrun when it became clear that they could be built more quickly than they could be destroyed. It had become essential that the narrow bridgehead be deepened for two specific reasons: firstly, to reduce the threat to London posed by the flying bombs and secondly, to provide sites for airfields for the Second Tactical Air Force to enable it to provide protection and support to meet the Army's immediate requirements.

For Montgomery, however, the airfields were not high on his priority list. The *Luftwaffe* had been singularly inactive and he saw no reason to distort his strategy merely to meet Air Force requirements. Both Lee-Mallory and Coningham made clear that they resented the attitude that Montgomery had adopted and they identified it “as a further example of the Army's tendency to regard the Air Force as an ‘auxiliary arm.’”¹³⁸

Despite Montgomery's later attempts to have Coningham removed, the Second Tactical Air Force performed notably in France and later in Germany, where their ‘cab-rank’ tactics provided significant moral and physical support for hard-pressed Army units. Coningham believed that the priority for his force was the stopping of enemy movement. Later, when his pilots were criticised for their

actions during the German withdrawal through the Falaise Gap, he was quick to their defence. Their task, he argued, was to cause confusion and prevent an organised withdrawal. Interdiction and not destruction was the essential requirement and this, he claimed, they achieved. An extensive investigation by Twenty-first Army Group scientists under Lieutenant Colonel Johnson, whose final report denigrated the rocket-firing Typhoon pilots, was rejected by one authority, supporting Coningham, who argued that

The Army scientists found it difficult to recognise that the air forces were not so much concerned with destroying individual tanks or vehicles as with causing the maximum amount of confusion and terror among the enemy forces. There is no doubt that they achieved these objects.¹³⁹

Following the establishment of the Allied forces in Europe, one of Air Commodore Bufton's first concerns was that the strategic bomber forces should revert to the control of the American and British Air Staffs, as agents for the Combined Chiefs of Staff. With Eisenhower in charge of the heavy bomber forces, Portal's role had become purely advisory. Bufton's arguments were marshalled in a paper sent to Bottomley on 20 July 1944.¹⁴⁰

His first point was that from a practical point of view difficulties had arisen in ensuring that the priorities determined by the Air Staff, relating to strategic attacks and attacks on German V-weapon launch sites, were rigidly followed. He argued that it was impossible for the Air Staff, lacking day to day control of the bomber forces, to effectively implement the agreed policies.

Secondly, he cited difficulties within various Commands. Bomber Command staff, Bufton suggested, were confused and uncertain as to who was actually in control. Eisenhower's Headquarters did not exercise close day to day control over strategic bombing requirements, neither did it possess the staff capable of fully comprehending the wider implications of such procedures. Tedder, he added, "recently expressed to me his concern at the dangers resulting from the Air Staff divesting itself of its prime responsibility in this matter."¹⁴¹ If a new Directive is to be issued, Bufton concluded, it is essential that it achieve maximum efficiency and not harm American/British relations. It is vital, he pointed out,

that the system we propose should be acceptable to the Americans and that they should not have imposed upon them a system which they might feel was ungenerous and not in tune with their present stature, efforts and achievements.¹⁴²

With this note to Bottomley Bufton also included a draft paper, requested by Portal, for the Chiefs of Staff consideration, relating to the issuance of a new directive under which the control of the strategic bomber forces should revert to the CAS as agent for the Combined Chiefs of Staff.¹⁴³ After the preamble, he cited as priorities for the strategic bomber forces based in the United Kingdom, the support of the land battle, *Pointblank*, and *Crossbow*. Eisenhower's direct concern, Bufton claimed, was the support of the land battle. Where either *Pointblank* or *Crossbow* was concerned, operations were best conducted in accordance with priorities determined by the Air Staff. It was not Eisenhower's responsibility to have to take into account problems that affected the war as a whole; his concerns were the problems and planning for military operations in Western Europe. The responsibility for determining the appropriate application of the strategic bomber effort, according to Bufton, properly rested with the Combined Chiefs of Staff.

Bufton then turned his attention to what he saw as targets or target systems that were becoming increasingly important. Oil, he argued, was such a target as it was vital to the German war effort. Supplies were becoming critical. If the deficiencies already being experienced could be exploited, then the enemy's ability to wage war on three fronts might well be decisively affected. If the strategic bomber forces were to be effectively employed, it was essential that their control was taken over by the Air Staffs equipped with the experience gained during two years of hard fighting.¹⁴⁴

The concluding paragraph of this note related to the status of General Spaatz. Since 1943 massive expansion had taken place in the American strategic bomber forces: they now included both the Eighth based in England and the Fifteenth in the Mediterranean. To control and co-ordinate their operations, an Air Staff had been established similar to, and operating in parallel with, the British Air Staff. The two Staffs worked closely together. In order that the relationship become even closer, and to enable ideas to be more closely integrated, Bufton suggested that Spaatz be appointed to the British Air Staff as Deputy Chief of the

Air Staff (US). This arrangement, he concluded, would fulfil two other important criteria. The stature of the American element would be raised, and Spaatz, in Portal's absence, would be able to function as the agent for the Combined Chiefs of Staff.

At Bottomley's suggestion, Bufton revised this note a month later, and it went forward, with only minor alterations, on 23 August 1944.¹⁴⁵ The final outcome, however, was not as Bufton had envisaged.

It will be recalled that under the terms of the Directive issued on 14 April 1944 by which Eisenhower had assumed responsibility for the direction of the strategic bomber forces, it had been agreed that the command situation would be reviewed once the Allied armies were firmly established on the Continent. The system had worked well. Harris, despite his initial qualms, had co-operated wholeheartedly and effectively and appeared satisfied with the independence he had been granted. Spaatz also seemed happy that the *status quo* should continue. In September, Eisenhower and Spaatz transferred their advanced headquarters to Versailles. Neither Eisenhower nor Arnold gave any indication that they were considering any alteration to the command structure.

Others were less happy. Churchill, Portal, and the Air Staff, were unanimous in their call for the control of Bomber Command to revert to the situation pertaining prior to 14 April. Their principal argument was that under the existing arrangements they were unable to ensure that the laid down bombing priorities were being followed. This particular claim has a somewhat hollow ring when one recalls the frequent appeals made by the Air Staff to Portal to insist that Harris be instructed to adhere more closely to the Directives that he had received. Late in August, Portal advised the Chiefs of Staff that he considered the time opportune for Eisenhower to relinquish his control of the strategic bomber forces in favour of the Chiefs of Staff. It was agreed that the subject should be discussed at the forthcoming *Octagon* Conference to be held in Quebec in the second week in September.

In August 1944 there was a further confrontation between the Scientific Advisers, Cherwell and Zuckerman, with Bufton caught in the middle. In a note to Churchill, Cherwell, perhaps anticipating Bufton's support, claimed that "recent experience had shown that railway and road bridges can be destroyed at a cost of 150 to 200 tons of bombs."¹⁴⁶ He reminded the Prime Minister that there were

some one hundred major bridges between Paris and the Rhine and on his mathematics they could be destroyed using less than 15,000 tons of bombs. Broken bridges cause more delay than damaged marshalling yards, he insisted, and he hoped that SHAEF would bear that point in mind in their planning.

Buften agreed with Cherwell, confirming he also considered that “the figures of 150-200 tons of bombs per bridge would not appear unreasonable.”¹⁴⁷ Furthermore, he continued, although marshalling yard attacks had caused both delays and damage, it had not been “commensurate with the sorties flown, aircraft lost, and resultant battle damage.”¹⁴⁸ On the other hand, he urged, “bridge attacks and rail cutting have achieved their primary purpose . . . with the result that reserves and supplies have reached the battle area late and in disorder.”¹⁴⁹ Buften’s recommendation was that, on the basis of recent experience, future attacks should concentrate on bridges rather than on railway centres.

Zuckerman, in a paper to Churchill concerning Cherwell’s minute and Buften’s observations on that minute, partially agreed with Buften but maintained that the case had been over-stated. In his opinion, the limited use that had been made of railways was due primarily to the railway centre bombing both before and after D-day. Additionally, Zuckerman conceded that the delay time for the “re-establishment of through traffic over destroyed bridges is in general greater than that . . . through bombed railway centres.”¹⁵⁰ His conclusion, nevertheless, was somewhat ambivalent when he contended:

The value of further attacks of bridges can only be measured by the relative delay which their destruction will impose in the total haul over the route of which they form a part. With the situation as fluid as it is now, it is therefore difficult to draw up in advance any rigid plan for attacks on specific bridges.¹⁵¹

While en route to the *Octagon* Conference in September 1944, Portal made clear to Churchill and the Chiefs of Staff that he believed it was time to reconsider the control of the strategic bomber forces. His arguments followed much the same lines earlier suggested by Buften. With the Allied armies firmly established on the Continent, and the campaign going well, future calls for close support by the strategic bombers were growing increasingly unlikely. It was thus a suitable time to return control to Portal and Arnold acting on behalf of the Combined Chiefs of

Staff. In the event of an emergency in the land battles, the strategic bomber forces would be made available to intervene

At Quebec, the British Chiefs of Staff proposed that Portal and Arnold assume control of the strategic bomber forces on behalf of the Combined Chiefs of Staff. Portal's representative would be Bottomley, based in London. Spaatz, alternating between his headquarters in London and France, would fulfil the same function for Arnold. The primary target systems suggested by the British Chiefs of Staff were the petroleum industry, ball bearings, the German tank industry, ordnance depots, and factories producing motor transport. When, because of weather or other tactical considerations, attacks on these targets were not possible, then Berlin or other large industrial areas should be substituted. Additionally, targets in east and south-east Europe were advocated as a way of providing assistance to the Russian armies.

The Directive proposed by the British officials was subjected to close questioning by Arnold. He posed four questions. Why was it necessary to remove control of the strategic bomber forces from Eisenhower, why had no mention been made of communication targets, who would make the binding decision in the event of a disagreement between Bottomley and Spaatz, and, finally, would the arrangements suggested make the best possible use of the enormous air power now available to the Allies?¹⁵²

Portal's response was interesting. With regard to the first question, he pointed out that the major intelligence units and the authorities responsible for interpreting the results of bombing attacks, were both most largely based in England, and immediately available to the command structure. Disagreements between Bottomley and Arnold, he maintained, could be referred to either himself or Arnold. Moreover, it was his belief that the best use of the air power available required that it be removed from Eisenhower's control. It would, however, remain immediately available should it be required for any crisis in the land battles.

Furthermore, Portal's response to the question concerning communication targets must have been of concern to many of the authorities at the meeting. They, he argued, were the primary concern of the medium bomber and fighter/bomber forces, and not of the heavy bombers. Had he forgotten, or was he not aware of the many successes (and losses) of the heavy bombers in the weeks before D-day? Did he now consider that approval of the Transportation Plan had

been a misapplication of the force available? Whatever his reasoning, he was going to be shown the error of his ways by the successes gained by the heavy bombers in their attacks directed against German transportation targets as the war continued.

At this point, however, Portal's interest had turned to German oil facilities. He had become aware that Tedder was anxious to carry out a campaign against German communications and he feared that Tedder would accord it priority over the oil attacks that appeared to be producing useful results. Change in the command structure was therefore necessary in order to regain a measure of control.

Arnold was converted. Perhaps he sympathised with the British desire to have Bomber Command controlled by the Air Staff. Or, was it that he perceived Spaatz's increased stature as an advantage? For whatever reason, he accepted the British proposals.¹⁵³ On 16 September a Directive was sent to Bottomley and Spaatz defining the new command structure. They, in turn, prepared a Directive that, on 25 September 1944, was sent to Harris and the Generals commanding the American Eighth and Fifteenth Air Forces

This new Directive, effective immediately, began: "executive responsibility for the control of the strategic bomber forces in Europe shall be vested in the Chief of the Air Staff, Royal Air Force, and the Commanding General, United States Army Air Forces, jointly. [sic]"¹⁵⁴ The overall mission for the Strategic Air Forces remained "the progressive destruction and dislocation of the German military, industrial and economic systems and the direct support of land and naval forces."¹⁵⁵ Target priorities were listed as, firstly, the German petroleum industry; in joint second, German rail and waterborne transportation systems, tank production plants and ordnance depots, and motor production plants and depots.

Neither Eisenhower nor Harris was wildly enthusiastic about the changes that had been made to the command structure. The Supreme Commander was the more easily placated. Once he was assured that any calls made for assistance from the heavy bombers would be answered immediately, he accepted the inevitable. Harris was less easily persuaded. His working relationship with Eisenhower had been relaxed and he railed at what he saw as the loss of his freedom of action. He resented a return to the system where Staff Officers in the Air Ministry could exert a measure of supervision. He sought clarification of the

chain of command from the Under Secretary of State for Air. Was he to take orders from Bottomley, Spaatz, or Tedder? Secondly, were his instructions to be broad outlines, or were they to be detailed briefings for specific bombing attacks?¹⁵⁶

Harris was assured that the Directives he received would not be issued in the name of any particular staff officer, but would be issued on behalf of the Chief of the Air Staff. Furthermore, they would be general and not specific instructions. Harris accepted these assurances and only asked that the original memorandum be amended to say that he was directly responsible to Portal.

The return of Harris to the supervision of the Air Staff in September 1944 marked also a return to the disagreements and conflict that had typified their association up to April of the same year. While at Tedder's beck and call Harris had cooperated willingly on demands made for his strategic bombers but otherwise was very much allowed free rein. In other words, when not required to attack targets nominated as assistance to the Allied armies, he simply pursued his primary target, German cities. The quarterly returns issued by Bomber Command Headquarters provide a clear picture.

For the period April to June 1944, thirty-eight per cent of Bomber Command's bombing effort went on attacking railway targets; twenty-two per cent on coastal batteries and seventeen per cent on targets in Germany — the euphemistic expression to cover area attacks on German cities.¹⁵⁷ From July to September 1944, Army support and transportation received thirty-five per cent of the bomb tonnage released, V-weapons twenty-five per cent, cities twenty per cent, and oil eleven per cent.¹⁵⁸ Following his return to the Air Staff control, and with fewer calls for the services of the strategic bombers, Harris, virtually ignoring the requirements of the Directive of 25 September 1944 which had accorded first priority to the German petroleum industry and second priority to rail and waterborne transportation systems, resumed his offensive against German cities. In the last three months of 1944 German cities received fifty-three per cent of the bombers' efforts, rail and water transport fifteen per cent, and oil fourteen per cent. The figures clearly show where Harris's main interests were concentrated.¹⁵⁹

Noble Frankland has also made clear that after the middle of 1944 there were occasions when there was some choice between area attacks on towns and precise attacks on oil and communication targets. His expressed regret was that

When Lord Portal believed that oil production was being under-bombed, Sir Arthur Harris believed that devastated cities were being allowed too much recovery time and Lord Tedder thought that the death grip on communications was being relaxed. There was justice in all these points of view. That none was prevailed over the others was tragic.¹⁶⁰

Confirmation of Harris's lack of interest in transportation targets is that in his *Despatch on War Operations* he provided only eleven lines relating to the disruption of communications in Germany. It is also noteworthy that for Harris the devastation of German rail facilities rated lower in his estimation than the ruin created in Germany's inland waterways. He admitted that the destruction of rail facilities "had a far reaching effect on military supplies and distribution of coal" but argued that the cutting of the Dortmund – Ems and Mittelland canals "was perhaps the telling blow."¹⁶¹ What Harris appears to have ignored, and what Alfred Mierzejewski has made clear, is that the German transport system was dominated by the rail network which carried three quarters of all freight and ninety per cent of the coal to more places, faster, and more often than canal barges. Only one tenth of all freight was carried on the canal and inland waterway systems.¹⁶²

Harris's obsession with German cities as his primary target, exemplified by the Blue Book records he maintained, is confirmation of his non-recognition of the abilities possessed by his bomber crews and proven in their transportation attacks carried out as preparation for *Overlord*. By 1944, Bomber Command was capable of carrying out accurate precision attacks on worthwhile targets deep in Germany. The Path Finders were a refined and potent Group more than capable of creating conditions for devastating attacks on previously safe targets. Germany had lost its early warning radar stations and the establishment of both Oboe and GH stations on the Continent had vastly extended the range at which precision targets could be identified, marked, and destroyed. Nevertheless, it is clear from Bomber Command's own records that cities, at least until the night of 14/15 April 1945 when Potsdam received the attention of 500 Lancasters and twelve Mosquitoes, remained the cynosure of Harris's eyes.

Over the last few months of the war Harris remained as intractable as ever and his disagreements and disobedience concerning oil targets, which will be

discussed in the next chapter, more than matched the differences he had with the Air Staff relating to transportation targets.

Post war, Churchill, despite having spent a lifetime debating and arguing over what could or could not be achieved by the proper employment of air power, said or wrote very little concerning Bomber Command. His apparent total rejection of Bomber Command, coupled with his failure to acknowledge their achievements or reward the leaders, is a slur on the memory of the 55,000 who gave their lives and adds nothing to his own stature.

Saundby, naturally, waxed lyrical later with regard to the attacks on German communications. He claimed that

Although the scope of Allied air operations and the choice of targets were determined by tactical considerations, the blows against Rundstedt's supply lines nevertheless brought about a further substantial fall in economic traffic in Western Germany. The attacks East of the Rhine, highly concentrated in time and space, against every type of railway installation, gave the *coup-de-grâce* to economic traffic operating in the Saar and Cologne regions The two chief waterways in the Dortmund-Ems and Mittelland canals, were cut by bombing in September 1944 and, by repeat attacks whenever necessary, were kept out of action until the end of the war.¹⁶³

When such wide-ranging and grandiose claims are made for a bombing campaign which from October to December 1944 only consumed fifteen per cent of Bomber Command's enormous power for transport targets and fourteen per cent for oil, one is forced to enquire how much earlier could the war have been won had the total power available been expended against the same two target systems, detailed as priorities, in Harris's Directive?

The Americans, although they had entered the war strongly declaring their intention to bomb only military targets had, by 1944, to radically revise their plans. Their doctrine, based on a strategic daylight precision bombing campaign aimed at the destruction of the German economy with a minimum of collateral damage to either civilian lives or property, had not achieved the desired results. There had been two critical miscalculations: they had underestimated the quality and effectiveness of the German air and ground defences and overestimated their own abilities. Moreover, they had been too largely unaware of the losses the bomber

forces would sustain (prior to the employment of long-range fighter escorts) and they appeared to have been totally ignorant of the very limited number of days throughout the year in Europe when weather would provide conditions suitable for visual bombing.

Although the escort problem was solved efficiently by the employment of Mustang, Thunderbolt and Lightning fighters, the weather problem drove the American strategic bomber commanders down a path they had long and publicly eschewed. Their adoption of the radar bombing device H2X, which the RAF had called H2S, although it allowed them to bomb through the overcast, severely reduced their accuracy. When half the ground was covered by cloud less than half of the bombs released fell within a one mile circle centred on the aiming point and ninety-six per cent fell within five miles. When the ground was totally obscured, only one in twenty bombs released fell within the one mile circle and only sixty per cent within five miles.¹⁶⁴ The American solution was to either increase the numbers of aircraft employed in an attack or increase the frequency of attack.

During the last year of the war the American bomber forces concentrated very largely on oil and transportation targets. Although the oil attacks provided reduced collateral damage, located as they usually were away from built up areas, the transportation targets were normally associated with a city and civilian losses were heavy. These attacks, employing H2X, would have been described by the RAF as area attacks but they were entered in the American records as precision attacks on the German transportation system. Contrary to the British experience, the American politicians, as we saw with Roosevelt and the railway bombing prior to *Overlord*, refused to interfere with what they viewed as a military problem to be overcome by military measures.

Although he had initially accepted the proposals for *Thunderclap*, the attack on German civilian morale, Spaatz later argued that it had been part of a plan for the Americans to have to bear part of the blame for the more critical features of the area bombing campaign. Berlin, he was prepared to admit, could be a target, but then added,

I personally believe that any deviation from our present policy, even for an exceptional case, will be unfortunate. There is no doubt in my mind that the RAF want very much to have the U.S. tarred with the morale bombing aftermath which we feel will be terrific.¹⁶⁵

Eisenhower, however, followed a more pragmatic line. He readily admitted that he was “always prepared to take part in anything that gives real promise to ending the war quickly.”¹⁶⁶ On Eisenhower’s instructions, Spaatz ordered Major General James Doolittle, the field commander of the Eighth Air Force, to prepare his force for an indiscriminate attack on Berlin under the provisions of *Thunderclap*.¹⁶⁷

By late 1944 transportation targets had, for the Americans, become second priority. Spaatz provided no instructions regarding the possibility of collateral damage but with the poor weather experienced it is clear that even if the Americans did not cross the line between an area and a marshalling yard attack, they certainly approached it very closely.

The transportation bombing campaign carried out by the Americans and Bomber Command, indirectly, with its area attacks on German cities, played a vital part in the destruction of the German war economy. The *Deutsche Reichsbahn*, the German railway system, pre-war, was up to date, well run, and, as the primary element of the country’s transport system, served the country and people efficiently and speedily. Nevertheless, by 1943 it had become inadequate because of territorial expansion, shortage of wagons, and the dispersal of industry in an effort to avoid air attack. The extensive rail network had proved to be incapable of meeting the demands placed on it by a war the magnitude of which had been grossly underestimated.¹⁶⁸

By January 1945 the bombing of the German rail system — marshalling yards, servicing centres, bridges, tunnels, locomotives and rolling stock — combined with the loss of the inland waterway system due to mining and bombing, together with the strains that had been imposed on a rail system struggling to cope with the ill-fated Ardennes offensive, destroyed the *Reichsbahn*.

Ruination of the *Reichsbahn* produced a comprehensive coal famine which created factory closures, a shortage of weapons, and the recognition, at least by Speer, the German Armaments Minister, that further struggle was pointless. By the end of February 1945 the accumulation of British and American incendiary and high explosive bombs on German cities, industry, oil, and transportation targets, had secured the collapse of the German economy.¹⁶⁹

Speer, in mid March 1945, advised Hitler that “The final collapse of the German economy can therefore be counted on with certainty within four or eight weeks After this collapse, even military continuation will become impossible.”¹⁷⁰ The war, if not yet officially, was over. The strategic air offensive, although not perfect and not providing adequate proof of pre-war theorists’ visions, was in the end, decisive. The throttling of the German economy and the enormous damage created in her cities had produced chaos. One authority took it further: “Even without the final ground invasion, it seemed, the Germans could not have continued the war.”¹⁷¹

Eisenhower’s relinquishment of the direct control of the strategic bomber forces in September 1944 was not the only command change late that year. On 13 October Bottomley and Spaatz established a committee to provide advice on the appropriate priorities for strategic targets. Prior to Eisenhower assuming control of the strategic bomber forces this task had been the responsibility of the Joint Target Intelligence Committee. The new advisory group, called the Combined Strategic Target Committee (CSTC), held its first meeting at the Air Ministry on 18 October 1944.¹⁷² At the insistence of Spaatz, the numbers on this committee were kept to a minimum with others invited as required. The Chairmanship was to alternate between the Director of Bomber Operations in the Air Ministry and the Director of Operations for the American Strategic Air Forces. The duties of the new committee were to recommend suitable targets for strategic bombers and to determine appropriate priorities between various target systems. It was also to advise when it was considered that variations were required to the current Directive and was to make recommendations regarding calls made by the War Office, Royal Navy, or Eisenhower’s Headquarters, for assistance from the strategic bomber forces.

Another significant and possibly overdue change was made on 15 October when the Allied Expeditionary Air Force was disbanded. It was replaced by an Air Staff in Eisenhower’s Headquarters under Tedder. Leigh-Mallory, whose position had long been invidious, was posted to command the Allied Air Forces in south-east Asia. In the event, he never took up his new appointment because he was killed in an air crash in France while on his way out east.

The new command structure at Eisenhower’s Headquarters, and the return of the strategic bomber forces to the British Air Staff and Spaatz, were still not the

ideal arrangements. Too often national interests took precedence over the demands of international military co-operation. Nevertheless preparations for the sixth winter of war were under way.

Perhaps the Transportation Plan attacks, followed by the extended communications bombing programme, took longer than was desirable to achieve victory, but Eisenhower was fulsome in his praise. "Long before we landed in France" he declared,

the heavy bombers had begun their task of destroying the centers of production upon which the enemy relied, and the fruits of this effort were evident immediately the land campaign began . . . these strategic blows at the heart of German industry . . . continued, and the task was also undertaken of cutting the supply lines which linked the factories to the fronts . . . Allied superiority in the air was . . . essential to our victory . . . and enabled us to prepare and execute our own ground operations in complete security.¹⁷³

Although the relevance of this lengthy chapter to the Harris/Air Staff confrontations may not appear to be strikingly obvious, the undertones are pertinent to the arguments that took place over a long period. Initially, Harris argued that Bomber Command should play no direct part in *Overlord* except the continuation of the area assault on German cities. He was unable to identify any target or target systems which he believed would provide a better return than the bombing programme he had largely followed since February 1942. When it was suggested to him that Bomber Command should undertake precision bombing attacks on the French and Belgian railway systems, he was quick to deny his Command possessed the capability to be effective. When pressed, he agreed to trial attacks and later expressed considerable surprise that his bombers could be so accurate and create such destruction. It was Bufton's opinion, presumably when Oboe was employed, that "Bomber Command have demonstrated their ability to achieve an accuracy and concentration on small targets far exceeding that which can be achieved by American heavies by day."¹⁷⁴

The lesson to be learned was that raids employing Oboe target marking largely meant that the target would be destroyed. Of course, in June 1944, the ground stations of the Oboe system were based in England which meant that targets deep in Germany were out of range. Later, as the Allied armies moved

forward, additional Oboe units and GH stations were established on the Continent and thus there were now few German targets that could not be accurately attacked. Did Harris accept this fact? He did not. Area bombing of German cities continued to be his primary aim when he was provided the opportunity. While serving under Eisenhower, Harris, very much, had been operating under less stringent supervision than that provided by the Air Ministry but he nevertheless totally fulfilled all Eisenhower's requirements. When required, he attacked the specifically nominated targets, and it must be acknowledged that Bomber Command's contribution to the success of *Overlord* and the land campaign that followed was very significant. But, while serving under Eisenhower, when given the opportunity to select targets, Harris largely redirected his attention to Germany's industrial cities.

On 25 September 1944 Harris was advised that under the terms of the Directive issued on that date executive responsibility for the control of Bomber Command was to be vested once again in Portal's hands. Harris, effectively, had been returned to the Air Ministry fold and over the next three months he made very clear that he was sternly intent on plugging the gap that had developed in the city attack programme by his enforced concentration on *Overlord*, *Pointblank*, and *Crossbow*, and subsequent ground battles in Europe. Portal was very much left lamenting. Despite his earnest entreaties that German oil be the preferred target, fifty-three per cent of Bomber Command's effort in the period October to December 1944 (inclusive) was again directed at her cities. Oil received only fourteen per cent.¹⁷⁵

As early as 1 November 1944 Harris claimed that

over the past eighteen months Bomber Command has virtually destroyed 45 of the leading German cities. In spite of invasion diversions we have so far managed to keep up and even to exceed our average of 2½ cities devastated a month . . . Are we now to abandon this task?¹⁷⁶

Harris, in opposing oil attacks, employed two main arguments. The first, and in some cases it was difficult to refute his claims, was that weather and other tactical reasons, dominated target selection. His second, more open to criticism, was that

in adopting the Oil Plan we sought a panacea. We shall fail and we are failing in our object for the reasons . . . that Germany being on the defensive, on interior lines and served by a close network of excellent roads and railways, will maintain the vital defensive essentials in fuel and transport in spite of all we can do to prevent her by air attack on oil.¹⁷⁷

In other words, Harris was claiming not only that the oil targets could not be attacked but also, even if they could be bombed successfully, it was a waste of effort. It was typical Harris obfuscation: if his first argument was valid, the second was superfluous.

The arguments between the Air Staff and Harris, despite apparent gaps, were on-going. In this chapter, although it was never mentioned, Schweinfurt featured prominently until at least April 1944 and oil had been introduced into the bombing equation even prior to the D-Day landings and became yet more prominent subsequently. *Overlord* had meant that the relationship between the Air Staff and Harris had, of necessity, to undergo change. Harris, for his part, may have been relieved to have been under less rigid scrutiny but Portal, early in the disruption, had become anxious to fully restore the *status quo*. Both were shortly to discover that nothing had changed — the arguments would continue.

End Notes

¹ COSSAC : Chief of Staff to the Supreme Allied Commander.

² Richard Hough and Denis Richards, *The Battle of Britain*, (London, 1990), p.318.

³ Vincent Orange, *Sir Keith Park*, (London, 1984), p. 120.

⁴ Solly Zuckerman, *From Apes to Warlords*, (London, 1978), p.230.

⁵ Lord Tedder, *With Prejudice*, (London, 1966), p. 565.

⁶ Webster and Frankland, Vol. IV, p. 273, para. 1(a).

- ⁷ Tuvia Ben-Moshe, "Winston Churchill and the 'Second Front' : A Reappraisal," in *Journal of Modern History* 62, September 1990, p. 528.
- ⁸ Bombing Survey Unit, M.A.A.F., 'Report on Air Attacks on Rail and Road Communications,' Zuckerman to Tedder, 28 December 1943, p. 21, para. 1.
- ⁹ Ibid.
- ¹⁰ PRO AIR 41/66, Lady E Freeman, *The Planning and Preparation of the Allied Expeditionary Force for the Invasion of North West France*, (London, No Date), 'Notes of a Meeting Held at Ministry of War Transport on 22 July 1943,' Appendix VI/64A.
- ¹¹ Ibid., Appendix.
- ¹² Harris papers, H65, 49, Harris to Churchill, 3 November 1943, p. 4.
- ¹³ Webster and Frankland, Vol. II, Harris to Air Ministry, 7 December 1943, p. 56, para. 6.
- ¹⁴ Portal Papers, File 10, 1944, 1, Portal to Harris, 23 December 1943, para. 2. Italics in original.
- ¹⁵ Spaatz was appointed Commanding General of all American heavy bomber forces in Europe (USSAFE) on 6 January 1944. His forces' title was shortly changed to United States Strategic Air Forces in Europe (USSTAF).
- ¹⁶ Portal Papers, File 10, 1944, 1a, Harris to Portal, 27 December 1943.
- ¹⁷ Ibid., Portal to Harris, 3 January 1944, 1b, para. 3. Underlining in the original.
- ¹⁸ Ibid., para. 5.
- ¹⁹ Harris Papers, H77, 15, 'The Employment of the Night Bomber Force in Connection with the Invasion of the Continent from the U.K.', 13 January 1944, para. 1.
- ²⁰ Ibid., para. 15.
- ²¹ PRO AIR 20/3223, Harris to Portal, 13 January 1944.
- ²² Ibid., Portal to Harris, 30 January 1944, Appendix 2.
- ²³ Ibid., Appendix 2, 27 January 1944, para. 21.
- ²⁴ *Crossbow*, the code word for the attack of German V-weapon launching sites in the Pas de Calais and Cherbourg regions. This Allied bombing programme had begun on 27 August 1943 with an American attack on facilities at Watten, near St Omer.
- ²⁵ Harris Papers, H28, Harris to Lovett, 24 January 1944, p. 2, para. 4.
- ²⁶ Harris Papers, H28, Lovett to Harris, 12 March 1944, para. 2. Lovett defined kibitzer as "a fellow who stands behind you, looks over your shoulder, breathes down your

neck, and any move you make says 'Oh, oh, that's too bad – you should have done it this way.'

²⁷ Ibid., para. 3.

²⁸ PRO AIR 20/3223, Portal to Harris, 30 January 1944, paras. 2 and 3.

²⁹ PRO AIR 41/56, G R M Hartcup, *The R.A.F. in the Bombing Offensive against Germany*, Vol. VI, (London, 1955), p. 6, Note (1).

³⁰ Zuckerman, *From Apes to Warlords*, p.220.

³¹ PRO AIR 41/66, Appendix VI/73, 18 January 1944.

³² Ibid., para. 18.

³³ Zuckerman, *From Apes to Warlords*, pp. 218-9.

³⁴ Harris Papers H28, Harris to Lovett, 3 April 1944, paras. 2 and 3. Harris wrote frequently to Lovett (who he had met and regarded as a good friend during his term as Head of the RAF Mission in Washington in 1941) but perhaps it was not a correspondence that should have been carried to the length it was, largely unbeknown to his superior officers. Additionally, Tedder's ideas relating to strategic bombing may not always have been as sound as Harris claimed. Tedder, for his part, was not always in agreement with either the policy or the methods pursued by Harris.

³⁵ Bufton Papers, 3/31, Bufton to Bottomley, 24 January 1944, para. 4.

³⁶ Ibid., 24 January 1944, para. 3.

³⁷ Craven and Cate(Eds.), *The Army Air Forces in World War II*, Vol. III, pps. 74-5. See also, Gordon A Harrison, *Cross-Channel Attack*, (Washington, 1951), p.218.

³⁸ Alfred Mierzejewski, "Wagons Must Roll for Victory: Allied Air Power and the German War Economy, 1944-45", (D. Phil. Dissertation, University of North Carolina, Chapel Hill, 1985), p. 96. See also, Rostow, *Pre-Invasion Bombing Strategy*, pp. 44-5.

³⁹ PRO AIR 41/66, Lady Freeman, Appendix VI/78, 22 January 1944.

⁴⁰ Ibid., para. 12.

⁴¹ Bufton Papers, 3/44, 11 February 1944, p. 3, para. 14.

⁴² Ibid., J Bronowski to Air Staff, 13 February 1944, p. 4, para. 9.

⁴³ Bufton Papers, 3/51, 'Conference Minutes,' 15 February 1944, paras. 14 and 26.

⁴⁴ Ibid., para. 27.

⁴⁵ Bufton Papers, 3/44, Grant to Bufton, 19 February 1944, paras. 2 and 3.

- ⁴⁶ Bufton Papers, 3/44, Bufton to Portal, 21 February 1944.
- ⁴⁷ Tedder, *With Prejudice*, p. 508.
- ⁴⁸ Zuckerman, *From Apes to Warlords*, p. 240.
- ⁴⁹ Bufton Papers, 3/44, Bottomley to Portal, 26 February 1944, p. 1, para. 2. Underlining in the original.
- ⁵⁰ Zuckerman, *From Apes to Warlords*, p. 248-51.
- ⁵¹ Prime Minister's Personal Minute, M194/4, Churchill to Portal and COS Committee, 29 February 1944, p. 1, para. 2.
- ⁵² Harrison, *Cross Channel Attack*, p. 220.
- ⁵³ Bill Newton Dunn, *Big Wing*, (Shrewsbury, 1992), p. 97. Quoting a letter from Leigh-Mallory to Portal, 21 November 1943.
- ⁵⁴ PRO AIR 20/3223, Harris memorandum, 'The Employment of the Night Bomber Force in Connection with the Invasion of the Continent from the U.K.,' 13 January 1944, p. 7, para. 19.
- ⁵⁵ *Ibid.*, p. 8, para. 22.
- ⁵⁶ PRO AIR 41/66, 21 January 1944, Appendix IV/12, paras. 1 and 6.
- ⁵⁷ Webster and Frankland, Vol. III, pp. 23-4.
- ⁵⁸ Lionel Lacey-Johnson, *Point Blank and Beyond*, (Shrewsbury, 1991), p. 52.
- ⁵⁹ Harris Papers H28, Lovett to Harris, 12 March 1944, para. 3,
- ⁶⁰ Trial attacks were necessary because Harris had claimed that Bomber Command lacked the capability of destroying rail targets. The first trial was against Trappes on the night of 6/7 March 1944 when enormous damage was created
- ⁶¹ The plan for an occupation of Europe in the event of a German collapse.
- ⁶² Bufton Papers 3/51, Bottomley to Portal, 12 March 1944, p. 3, para. 9(i).
- ⁶³ Bufton Papers 3/44, Bottomley to Portal, 14 March 1944, para. 8.
- ⁶⁴ *Ibid.*, Air Staff Paper, 19 March 1944, p. 4, para. 11.
- ⁶⁵ Kingston-McCloughry Papers, Box P417, File 10/8, pp. 29-32. See also, Air Vice-Marshal E J Kingston-McCloughry, *The Direction of War*, (London, 1955), pp. 108-135.
- ⁶⁶ Bufton Papers 3/44, Bufton to Bottomley, 23 March 1944.
- ⁶⁷ *Ibid.*, 'Overlord, Air Policy,' Note by the War Office, 24 March 1944, para. 5.

- ⁶⁸ Cabell Papers, TS 189327, Spaatz to Arnold, 24 March 1944.
- ⁶⁹ Harris Papers, H83, 22, Harris to Portal, 24 March 1944, para. 2.
- ⁷⁰ Ibid., p. 3, para. 8.
- ⁷¹ PRO AIR 8/1188, Bottomley to Portal, 24 March 1944, para. 10.
- ⁷² See pp. 215/6.
- ⁷³ PRO AIR 41/66, Lady Freeman, Tedder Paper, 'Employment of Allied Air Forces in Support of "OVERLORD," ' Appendix VI/106, 24 March 1944, p. 2, para. 6.
- ⁷⁴ Ibid., p. 3, para. 10.
- ⁷⁵ Ibid., para. 12.
- ⁷⁶ PRO AIR 8/1536, 'Verbatim Record of Third Day of Exercise Thunderbolt,' 15 August 1947, Item 17, Discussion of Item 16, 'Air Operations against the Communications Systems in the Occupied Countries and Germany in support of Overlord,' p. 6.
- ⁷⁷ Ibid.
- ⁷⁸ Ibid.
- ⁷⁹ Tedder, *With Prejudice*, p. 509.
- ⁸⁰ PRO AIR 41/66, Lady Freeman, Appendix VI/109, *Minutes of Meeting held by Chief of Staff to Discuss the Preparatory Bombing Plan for Overlord*, 25 March 1944, p. 3.
- ⁸¹ Ibid., p. 4.
- ⁸² Ibid., p. 5. See also WF, Vol. III, pp. 32-3.
- ⁸³ Ibid., p. 5.
- ⁸⁴ Ibid.
- ⁸⁵ Slessor, *The Central Blue*, p. 521.
- ⁸⁶ W W Rostow, *Pre-Invasion Bombing Strategy*, (Aldershot, 1981), p. 76
- ⁸⁷ Harris, *Bomber Offensive*, p. 220.
- ⁸⁸ Adolf Galland, *The First and the Last*, (London, 1955), p. 279.
- ⁸⁹ PRO AIR 41/66, 25 March 1944, Appendix VI/109, p. 3.
- ⁹⁰ Ibid. P. 4, Underlining in the original.

- ⁹¹ PRO AIR 41/66, Spaatz to Eisenhower, 26 March 1944 VI/107, Appendix, para. 2.
- ⁹² Ibid., para. 6. Underlining in the original.
- ⁹³ Bufton Papers 3/46, Bufton to Coryton, 28 March 1944, para. 2.
- ⁹⁴ Ibid., para. 5.
- ⁹⁵ Bufton Papers 3/51, Portal to Churchill, 29 March 1944, para. 1.
- ⁹⁶ Zuckerman, *From Apes to Warlords*, p. 248.
- ⁹⁷ Ibid. See also Tedder, *With Prejudice*, p. 532 and Kingston-McCloughry, Box 417, File 10/8, pp. 26-29.
- ⁹⁸ Zuckerman, *From Apes to Warlords*, p.249.
- ⁹⁹ According to Portal: "Bomber Command, so as to be on the safe side, had multiplied the original estimates of the bomber effort required by what was called an 'operational factor' of three." See Zuckerman, *From Apes to Warlords*, p. 250. Kingston-Cloughrey indicated that "Recent results had shown that the plan could be achieved by one and half times the effort first suggested." See Kingston-McCloughrey Papers, Box P417, File 10/8, p.30.
- ¹⁰⁰ Bufton Tape, Tape 5, Side A.
- ¹⁰¹ Bufton Papers 3/46, 'Plan for the Employment of the Strategic Bomber Forces Prior to "OVERLORD," ' 10 April 1944, p.9, para. 17.
- ¹⁰² *Neptune* - the codeword for the naval assault phase of *Overlord*.
- ¹⁰³ PRO AIR 41/66, p.160.
- ¹⁰⁴ Tedder, *With Prejudice*, p. 525.
- ¹⁰⁵ Bufton Papers, 3/47, Bottomley to Harris, 13 April 1944, para. 3.
- ¹⁰⁶ Webster and Frankland, Vol. IV, pp. 167-170.
- ¹⁰⁷ Ibid., p. 170, para. 14.
- ¹⁰⁸ Ibid., p. 168, para. 6.
- ¹⁰⁹ PRO AIR 41/66, p. 163.
- ¹¹⁰ Zuckerman, *From Apes to Warlords*, p.255.
- ¹¹¹ Ibid., p. 256. Also Kingston-McCloughry Papers, Box P417, File 10/8, p.36.
- ¹¹² Tedder, *With Prejudice*, p.529.
- ¹¹³ Kingston-McCloughry Papers, Box P417, File 10/8, p. 38.

- ¹¹⁴ Bufton Papers 3/46, 'Plan for the Employment of the Strategic Bomber Forces in the Remaining Period Prior to Overlord,' 2 May 1944.
- ¹¹⁵ PRO AIR 8/1190, 'Minutes of Defence Committee (Operations),' 3 May 1944, p. 4.
- ¹¹⁶ Lord Zuckerman, 'Allied Interdiction Campaign,' speech to SHAPE Military History Society, 14 October 1988, pp. E-1 and E-2.
- ¹¹⁷ Professor S Zuckerman, *Report on Air Attacks on Rail and Road Communications*. Zuckerman to Tedder, 28 December 1943, Appendix 1, p. 22, para. 18.
- ¹¹⁸ Bufton Papers, 3/46, 2 April 1944, p. 2, para. 5.
- ¹¹⁹ PRO AIR 8/1190, Minutes of War Cabinet Defence Committee meeting, 3 May 1944, p. 4.
- ¹²⁰ PRO AIR 41/66, Appendix VI/116, Meeting at SHAEF, 3 May 1944, p. 2, para. 9.
- ¹²¹ Colonel Richard D Hughes, Microfilm 40505, Air Force Historical Research Agency, Maxwell AFB, Alabama, Chapter VIII, p. 48. Underlining in original.
- ¹²² *Ibid.*, pp. 45-6.
- ¹²³ Churchill, *The Second World War, Vol. V, Closing the Ring*, p. 467, 7 May 1944.
- ¹²⁴ *Ibid.*, 11 May 1944, p. 468.
- ¹²⁵ PRO CAB 120/302, Prime Minister's Personal Minute, D159/4, Churchill to Ismay and Eisenhower, 16 May 1944.
- ¹²⁶ PRO AIR 41/66, p. 173.
- ¹²⁷ PRO AIR 14/3451, *Bomber Command Quarterly Review*, no. 9, April-June 1944, pp. 7-9.
- ¹²⁸ PRO AIR 41/66, Lady Freeman, Appendix VI/122, p. 2, para. 2.
- ¹²⁹ Rostow, *Pre-Invasion Bombing Strategy*, pp. 56-7.
- ¹³⁰ PRO AIR 41/66, p. 181. See also Rostow, p. 64.
- ¹³¹ Craven and Cate, *The Army Air Forces in World War II*, Vol. III, p. 174.
- ¹³² Bufton Papers, 3/46, Deputy Director of Bomber Operations 1 to Bufton, 19 June 1944, para. ii. See also Zuckerman, *op. cit.*, pp. 237-8.
- ¹³³ Kingston-McCloughry Papers, Box P411, File 3/8, p. 10, para. 37.
- ¹³⁴ Zuckerman, *From Apes to Warlords*, pp. 408-417. See also p. 206 with regard to the three column table.

- ¹³⁵ Vincent Orange, *Coningham*, (London, 1990), pp. 170-171
- ¹³⁶ *Ibid.*, p. 191.
- ¹³⁷ Christopher Shores, *2nd Tactical Air Force*, (Reading, 1970).
- ¹³⁸ Chester Wilmot, *The Struggle for Europe*, (London, 1971), p. 340
- ¹³⁹ Air Ministry, *Operational Research in the RAF*, (London, 1963), p. 137. This book is also identified as Air Publication 3368.
- ¹⁴⁰ Bufton Papers, 3/51, Bufton to Bottomley, 20 July 1944.
- ¹⁴¹ *Ibid.*, para. 4.
- ¹⁴² *Ibid.*, para. 9.
- ¹⁴³ Bufton Papers, 3/77, *Control of Strategic Bomber Forces in Europe Following the Establishment of Allied Forces on the Continent*, 20 July 1944.
- ¹⁴⁴ *Ibid.*, pp.2 and 3, para. 5(iii).
- ¹⁴⁵ Bufton Papers, 3/51, 23 August 1944.
- ¹⁴⁶ PRO AIR 41/66, Lady Freeman, Appendix VI/135C, Cherwell to Prime Minister, 10 August 1944, para. 1.a
- ¹⁴⁷ PRO AIR 41/66, Lady Freeman, Appendix VI/135D, Bufton to Portal, 17 August 1944, p. 1, para. 1.
- ¹⁴⁸ *Ibid.*, para. 6, sub para. 15.
- ¹⁴⁹ *Ibid.*, sub. para. 16.
- ¹⁵⁰ PRO AIR 41/66, Lady Freeman, Appendix VI/135E, Zuckerman to Churchill, 25 August 1944, p. 2, para. 12.
- ¹⁵¹ *Ibid.*
- ¹⁵² PRO AIR 41/56, p.111.
- ¹⁵³ *Ibid.*, p. 111. See also H H Arnold, *Global Mission*, (Blue Ridge Summit, 1989), pp. 523-9. Arnold in his coverage of the Second Quebec Conference, dealt mainly with the war against Japan and the British desire to be granted the opportunity for both air and naval contribution.
- ¹⁵⁴ Bufton Papers, 3/47, Bottomley to Harris, Spaatz and Leigh-Mallory, 25 September 1944, para. 1.
- ¹⁵⁵ Webster and Frankland, Vol. IV, p. 172, para. 1.

- ¹⁵⁶ Harris Papers, H68, 99, Harris to Under Secretary of State, 17 November 1944, p. 2. Para. 7(a), p. 3, para. 7(b).
- ¹⁵⁷ PRO AIR 14/3451, *Bomber Command Quarterly Review*, No. 9, April-June 1944, p. 1.
- ¹⁵⁸ *Ibid.*, No. 10, July-September 1944, p. 1.
- ¹⁵⁹ *Ibid.*, No. 11, October-December 1944, p. 2.
- ¹⁶⁰ Noble Frankland, *The Bombing Offensive Against Germany*, (London, 1965), p. 103.
- ¹⁶¹ Sir Arthur Harris, *Despatch on War Operations 23 February 1942 to 8 May 1945*, (London. 1995), p. 31.
- ¹⁶² Alfred Mierzejewski, 'The Deutsche Reichsbahn and Germany's Supply of Coal,' in *The Journal of Transport History*, Third Series, Vol. 8, No. 2, September 1987, p.113.
- ¹⁶³ Sir Robert Saundby, 'Air Attack on Communications,' in *Journal of the Royal United Service Institution*, Vol. XL, No. 560, November 1945, pp. 481-2.
- ¹⁶⁴ Richard G Davis, 'German Railyards and Cities: U.S. Bombing Policy 1944-1945,' in *Air Power History*, Summer 1995, p. 48.
- ¹⁶⁵ Richard G Davis, *Carl A Spaatz and the Air War in Europe*, (Washington, DC, 1993), p. 438. See also Conrad C Crane, 'Evolution of U.S. Strategic Bombing of Urban Areas,' in *Historian*, Vol. L, No. 1, November 1987, pp. 14-39.
- ¹⁶⁶ Biddle, *Rhetoric and Reality in Air Warfare*, p. 239.
- ¹⁶⁷ *Ibid.*
- ¹⁶⁸ Mierezejewski, 'The Deutsche Reichsbahn and Germany's Supply of Coal 1939-1945,' p. 119.
- ¹⁶⁹ Stephen L McFarland and Wesley Phillips Newton, 'The American Strategic Air Offensive against Germany in World War II,' in R. Cargill Hall (Ed.), *Case Studies in Strategic Bombardment*, (Washington D.C., 1998), p. 230.
- ¹⁷⁰ Tedder, *With Prejudice*, p. 674.
- ¹⁷¹ Craven and Cate, Vol. III, p.755.
- ¹⁷² Bufton Papers, 4/6, 13 October 1944. For minutes of the first meeting, see PRO Air 40/1269, 18 October 1944. For further details on the CSTC, see Alfred C Mierzejewski, 'Intelligence and the Strategic Bombing of Germany, The Combined Strategic Targets Committee,' in *International Journal of Intelligence and Counter-Intelligence*, Vol. 3, No. 1, Spring 1989, pp. 83-104.
- ¹⁷³ Dwight D Eisenhower, *Report by the Supreme Commander to the Combined Chiefs of Staff on the Operations in Europe of the Allied Expeditionary Force 6 June 1944 to 8 May 1945*, (London, 1946), p. 147.

¹⁷⁴ Zuckerman, *From Apes to Warlords 1904-46*, p.409.

¹⁷⁵ PRO AIR 14/3453, Bomber Command Quarterly Review, No. 11, October – December 1944, p. 2.

¹⁷⁶ Portal Papers, File 10, 1944, 32, Harris to Portal, 1 November 1944, pp. 3 and 4.

¹⁷⁷ Harris Papers, H84, 18A, Harris to Portal, 22 February 1945, p. 2, para. 10, underlining in the original.

Chapter Seven

Oil Targets

In any consideration of the relationship between Portal, the Air Staff, and Harris, the disputes relating to the bombing of German oil targets are crucial. It is arguable that had these targets been bombed as the Air Staff frequently enjoined, then the war would not have continued into 1945. In the earlier chapters concerning incendiaries versus high explosive bombs, the formation of the Pathfinder Force, Schweinfurt, and the pre-*Overlord* bombing requirements, it has been shown that although Harris employed obfuscation and blatant delaying tactics, he ultimately at least gave the appearance of having obeyed the Air Staff's orders. Unfortunately, in the case of the PFF as we have seen, Harris agreed to its formation but immediately began the establishment of a PFF to his design and not that required by the Air Staff. In the case of German oil he employed the same tactics but added to them by arguing with his superior Portal, until eventually, as will be seen later in this chapter, it was Portal who yielded, acknowledging that they would wait until the end of the war to see who had been correct.

The central characters in this chapter are, of course, Portal and Harris but what must not be overlooked was the critical role played by the man caught in the middle, Bufton. He was employed by Portal not only to refute Harris's arguments but also provide, in draft form, the written responses. Despite the differences of opinion that had arisen between Portal and Bufton relating to pre-*Overlord* requirements, Bufton clearly continued to be an Air Staff member in whom Portal placed implicit trust. The oil story reveals character blemishes, misjudgements, mismanagement, failure to act decisively and one is left to lament, what might have been?

One lesson learned, and accepted by Germany after the First World War, was that a significant element of that conflict had been the victory of the petrol engine over the steam engine.¹ Future wars would therefore require an expanded and sustained oil supply system. But Germany was oil-poor; less than ten per cent of requirements were locally produced. The oil planning staff, established by Hitler's National Socialist Party, recognised the potential problems and set about

production expansion; development of a synthetic oil industry; vastly increased importation of oil products; and the construction of underground storage facilities.

Although expansion of a synthetic oil industry had begun in 1935, commercial interests, in the main, steered clear of the project because of the enormous capital costs and uneconomic plant operation. However, the Four-Year Plan of September 1936, under the stewardship of Hermann Göring, had, as one of its primary aims, state-aided, increased indigenous synthetic oil production. The basic ingredient was the plentiful supplies of German bituminous, or black coal, found in the Ruhr, and lignite, or brown coal, from central Germany.

Two different processes were involved. The more important, the *Bergius* hydrogenation process, involved forcing hydrogen into the split molecules of coal to produce liquid oil molecules. This was a vital production source for Germany because, by the beginning of 1944, these plants produced almost forty-seven per cent of all her oil products. Even more importantly, they supplied almost the total oil and high grade petrol needed to keep the *Luftwaffe* operational. The process was extremely flexible, thus outputs of various oil products were readily changed to meet varying demands. The three main *Bergius* plants were located at Leuna, ninety miles south-west of Berlin, Pölitz, seventy-five miles north-east of the German capital, and later, a new plant at Brůx, in Czechoslovakia. The combined outputs from Leuna and Pölitz contributed more than a third of the total *Bergius* yearly production.²

The other process to produce synthetic oil was known as the *Fischer Tropsch* method. This involved breaking up coal using steam to obtain molecules of hydrogen and carbon monoxide. The resultant was then synthesised by a complicated process to produce the final oil products. These were normally either high grade petrol or diesel oil.

Unfortunately for Germany, five-year production estimates vastly exceeded the synthetic oil industry's capacity. Steel for construction and skilled labour were both in short supply. In June 1938, a revised Four-Year Plan was introduced, which, because of the Göring connection, came to be called the *Karinhall* Plan. Revised production figures were established, with a target date of 1942-43. The aim was to produce, annually, 13,835,000 tons of oil products. Had that target been achieved, roughly 1,153,000 tons monthly, then with a peace-time, monthly

consumption of 670,000 tons, the oil ledger would have been considerably in credit.

The figures require close examination. Peace-time monthly consumption included 437,000 tons of imported oil. Estimated war-time consumption, including both civil and military requirements, totalled 689,800 tons per month. After the outbreak of war Germany's total oil imports, with Russia and Romania being the only providers thanks to the British blockade, Germany's total oil income was reduced to only 455,000 tons per month.³ The oil ledger would thus be in debit necessitating recourse to strategic oil reserves. It is therefore easy to understand Hitler's somewhat unusual exhortation to his generals, in May 1939: "Everybody's Armed Forces and Government must strive for a short war."⁴

War, however, came earlier than Germany had planned. As a consequence, Germany went to war in 1939 with both her oil reserves and production in a parlous state. There was the expectation that production would increase from new oil fields discovered in north Germany; the hope that Austrian and synthetic production would increase; and the misguided belief that industrial expansion and production would continue, unaffected by enemy action. Admittedly synthetic production doubled between 1936 and 1939, but the 1939 output was still forty-five per cent under the projected production.⁵ What is more, Germany's oil problems had been recognised by oil authorities in England.

Prior to the outbreak of the Second World War the Air Staff drew up a series of plans, Western Air Plans, for the employment of Bomber Command in the event of war with Germany. They were divided basically into those that could be described as defensive, and those that were, by their nature, offensive. One of the major considerations had been the need to provide no provocation that would cause the *Luftwaffe* to launch an all-out assault on British targets. Thus, at the outbreak of war, in order to avoid placing German civilians at risk, the only possible targets for Bomber Command were units of the German navy. Their other activity was widespread leaflet dropping.

Defensive measures, it had been appreciated, would not secure victory. Offensive plans were also necessary, either in response to German actions or in the effort to defeat the enemy. Plans had also been prepared for unrestricted warfare on German targets. One such plan was Western Air Plan 6 (WA 6), later revised to WA 5c, the attack on German war resources of oil.

The first draft of the oil plan was received at Bomber Command on 1 July 1939 and a revised version twenty-four days later. The Air Staff plan was based on the assumption that the German oil situation, lacking natural resources, was one that very easily could become critical. One estimate was that supplies were sufficient for only six or seven months' intense activity. After that, if it became possible to totally cut off oil imports, it was believed that Germany would only be able to meet twenty per cent of her oil requirements from internal sources. The outline plan was to "reduce Germany's war resources of oil as rapidly and as completely as possible."⁶ No specific plans were made for attacks on German domestic oil fields because unless the facilities – derricks, reservoirs, pumping stations, and power plants – were concentrated, the targets would be too small. The focus, instead, was on imported oils and domestic oils in refineries. A list of thirty-two possible targets was prepared. These were broken down into fourteen refineries (eight for imported oil and six for domestic oil), sixteen plants for the production of synthetic oil, and two tank farms.⁷

Target selection for Bomber Command during the Second World War, as described in Chapter Two, involved many agencies but in addition to those already described there was also the Oil Committee. As a Cabinet advisory body it exerted considerable influence. First established in 1928 under the title of Industrial Intelligence Centre, it was responsible for the on-going review of Germany's oil supplies. Renamed the Lloyd Committee in 1939, its task was to consider ways to prevent oil reaching Germany, examine the current and future German oil requirements, the effects of bombing, and the provision of advice on oil bombing strategy. The Oil Committee reported directly to the Hankey Committee which had been established at the same time. In early 1942 the Enemy Oil Committee was set up in Washington and an MEW employee in the British Embassy was accorded accreditation. Next, in March 1942, the Hartley Technical Sub-Committee on Axis Oil was established, replacing both the Lloyd and Hankey Committees. In July 1944 a Joint Oil Targets Committee was formed to study the German oil situation, advise on target priorities, and assess bombing effectiveness. Finally, on 18 October 1944, after oil had become the primary target of the Combined Bomber Offensive (CBO), the newly formed Combined Strategic Target Committee (CSTC), under the alternate chairmanship of the Director of Bomber Operations and the Director of Operations, United States

Strategic Air Forces Europe, with a sub-committee, the Joint Oil Targets Committee, was made responsible for oil targeting.

The members of the CSTC were representatives from the authorities in Bomber Operations and Intelligence Directorates in the Air Ministry; Operations and Intelligence Directorates in the American Strategic Air Force Europe; Enemy Branch of the Foreign Office and MEW; Enemy Objectives Unit in the United States Embassy and representatives from the Supreme Headquarters of the Allied Expeditionary Air Force.

The terms of reference for the CSTC were clearly defined. It was responsible for advising the Deputy Chief of the Air Staff and the Commanding General of the American Strategic Air Force on target priorities and the priorities to be established between different target systems. It was also to advise on any need that may arise, at any time, for a major change to the current directive. Finally, it was the responsibility of the CSTC to consider and make recommendations on proposals submitted by the Supreme Headquarters Allied Expeditionary Force, Admiralty or the War Office, involving the employment of the strategic bomber forces.

The CSTC was also required to issue, on a weekly basis, priority lists of strategic targets to be attacked under the current directive, and to submit, when necessary, joint proposals to meet specific situations as and when they might arise. In order to assist their deliberations, working committees on oil, Army support objectives and the *Luftwaffe*, were also formed.⁸

During 1940 a veritable plethora of Directives were issued to Bomber Command, at least seven of which nominated oil as a target. The frequency with which new Directives appeared indicates that there was no overall master plan for the employment of Bomber Command. Rather, it was being called upon simply to plug gaps as they appeared. In several instances the impression was given that the Air Staff, rather than Air Marshal Sir Richard Peirse, the Air Officer Commanding-in-Chief, Bomber Command, were running the bomber war.

Bomber Command's offensive in 1940 and 1941 against targets in the German oil industry was a signal failure. Despite the optimistic hopes held of the crucial state of German oil supplies, together with the belief that Bomber Command could locate and destroy the sources of supply, refineries, and the holding tanks, Germany's oil reserves continued to expand. On 15 January 1941

a new Directive was issued which claimed, tentatively, that “On the assumption that our present scale of air attack on the enemy’s oil plants is maintained, their oil position may be causing them grave anxiety by the Spring of 1941.”⁹ Clearly, the intelligence available to the British authorities relating to Germany’s oil position had serious shortcomings.

Naturally the *communiqués* issued following attacks on German oil refineries and synthetic oil plants provided graphic details of the damage they were supposedly sustaining. Churchill, recently appointed Prime Minister and Minister of Defence, in a radio broadcast on 19 May 1940, assured the British people that

In the air — often at serious odds, often at odds hitherto thought over whelming — we have been clawing down three or four to one of our enemies and the relative balance of the British and German Air Forces is now considerably more favourable to us than at the beginning of the battle At the same time, our heavy bombers are striking nightly at the tap-root of German mechanized power, and have already inflicted serious damage upon the oil refineries on which the Nazi effort to dominate the world directly depends.¹⁰

In a speech on 21 September 1940, the Minister of Economic Warfare, Dr Hugh Dalton, declared that ninety per cent of Germany’s synthetic oil production and eighty per cent of her refineries had been “hammered with devastating effect.”¹¹ His claim was, of course, a gross distortion but morale would not have been bolstered by an awareness of reality. Truth, at that time, was simply another commodity that had to be severely rationed.

In January 1941 the War Cabinet accepted Portal’s argument that Bomber Command was capable of creating sufficient damage to German synthetic oil plants to provide decisive effects on the course of the war. In the Directive of 15 January 1941, German synthetic oil plants became the primary aim. In a letter to Peirse, Portal ordered that “Everything else is to be subordinated to it until we either achieve success or admit failure.”¹²

Just over a month later, Peirse advised Portal that despite oil targets being first priority, in the thirty-three operations carried out by Bomber Command since the beginning of the year, only three were exclusively against oil.¹³ Portal’s response was an indication that he had somewhat lost faith in the current bombing

programme. Public opinion, he suggested, was moving away from oil and was calling for mass attacks on industrial centres. The British people apparently, were seeking revenge. The Air Staff, he continued, are now working on a new review. He admitted that he did not know what the answer would be, but, he concluded, "even if we have to give up oil, we have the consolation of not having wasted much on it since the Cabinet decision."¹⁴

Early in 1941 Air Commodore Baker, Director of Bomber Operations, began to voice his opposition to plans that had as their primary objective a quick end to the war. Germany, it was accepted, could not win a long war but, at the same time, it was impossible for Great Britain to win a short one. He was firm in his assessment that, as far as Bomber Command was concerned, the bombing policies employed had always appeared to seek the quick answer. The attacks on German oil had been too few in number and too inaccurate to achieve a worthwhile effect. The moment had passed, he asserted, for the destruction of German oil to provide the way to victory. He continued,

With the entry of the Germans into Roumania, and the consequent German control of the oil industry . . . coupled with the almost complete interference with the oil plan due to recent bad weather, the task of seriously restricting Germany's oil supplies has assumed such proportions as to be probably beyond the capacity of our bomber force. If this is so it is not acceptable as our principal aim.¹⁵

Russian oil, and its possible availability to Germany either through conquest, or trade following the Non-Aggression Pact of August 1939, had been of concern to Britain and France since 1940. In that year planning was started for possible air attacks on the giant Caucasian oil fields. On 24 April 1940 Chamberlain, the British Prime Minister, advised his War Cabinet that, although the military authorities were to continue planning, the operation had been deferred.¹⁶

In August 1941 the plan was revived. The fear now was that Germany might gain complete control of the Caucasus oil industry either through conquest, or by means of an armistice which might well be imposed upon Russia. But they were plans with little hope of fulfilment. The initial force employed, based in Iraq, was to be four Blenheim Mark IV squadrons together with two Hurricane squadrons. Additional aerodromes were to be constructed in northern Iraq for five

heavy bomber squadrons for later hot weather operations.¹⁷ Although apparently not clearly identified by British authorities, the tentative plans also imposed enormous risks. According to Sir John Slessor,

The feature of these discussions which, in retrospect, really makes one's hair stand on end is the air – not perhaps of complacency but of acceptance – with which we faced the prospect of enlisting Russia among our enemies.¹⁸

By July 1941 oil as the target for Bomber Command was also falling into disfavour with the Directorate of Plans in the Air Ministry. The difficulties of target identification at night had been much under estimated, they asserted, and the numbers of aircraft which claimed to have attacked had always been too small to produce an effective result. In a note to Portal, the Deputy Director warned:

However attractive oil targets in Germany may be now, or in the future, economically, they are unsatisfactory targets tactically and will remain so until such time as, either our equipment or the strategical situation permits our bombers to operate over Germany by day in large numbers.¹⁹

Despite the contents of this letter, and his earlier admission of his dissatisfaction with the oil bombing programme, Portal added a note to the Deputy Chief of the Air Staff through the Director of Plans, ordering that a heavy scale attack be launched against Gelsenkirchen, an oil city in the Ruhr, “at the first suitable opportunity.”²⁰ An attack had been made on the Nordstern and Scholven synthetic oil plants in Gelsenkirchen on the night of 14/15 March 1941 but this latest instruction from Portal was seemingly ignored, because the next attack did not take place until the night of 25/26 June 1943.

Indicative of the uncertainty and disagreements which existed among the higher echelons of policy makers in 1941, is the memorandum by Lord Hankey appealing for a continuation of attacks against German oil targets. He first called for attacks on Romanian oil targets as a boost for the Russians, but then turned his attention to targets in Germany. He repeated the claim of the Chiefs of Staff Committee, that the destruction of the nine synthetic oil plants, comparatively large targets, “would reduce Germany’s internal production of oil by 83 per cent.”²¹

Under the terms of the Directive issued to Bomber Command on 14 February 1942 and inherited by Harris, area attacks aimed at the morale of the German work force had become the primary target for bomber crews. Nevertheless, spasmodic efforts continued to be made to effect the resumption of attacks on elements of the German oil industry. A memorandum by Oliver Lawrence of the MEW, 'Night Bombing as an Instrument of Economic Warfare,' warned against any tendency for planners to become engrossed with technical and operational problems to the detriment of economic strategy.²² Lawrence's memorandum was followed by a paper from Colonel Oliver Stanley, Secretary of State for the Colonies, who had been directed by the Cabinet to make an enquiry into the possibility of attacking German oil supplies. His summation was that with the limited bombing force then available, the synthetic plants in Germany and the oil fields at Ploesti in Romania were in no danger.²³

Oil targets, only a primary target for a limited time, were thus largely removed from target planning. But in September 1942 Bottomley attempted to draw Harris's attention to the importance of the synthetic oil plant at Pölitz. Harris was instructed to add this target to the list that had been issued in the 14 February 1942 Directive.²⁴

Harris responded vigorously. Pölitz, he complained, was an unwanted diversion. Now, he continued,

the 'oily boys' choose this moment yet again to emerge with their fairy stories about oil . . . Two years ago we were assured that by knocking out the oil plants we could win the war . . . it is at this juncture that . . . the 'oily boys' re-assert that if we flatten Poelitz . . . then we have got 'em . . . I simply don't believe a word of it.²⁵

It was a bitter letter in which Harris raged on about the various panacea mongers trying to distract him from his efforts to flatten the German cities.

In January 1943 German oil targets made their reappearance as potential targets for Bomber Command in the *Casablanca* Directive. The war had turned in the Allies' favour and it now appeared time to begin a softening-up process in preparation for a return to the Continent in 1944. Oil was accorded fourth priority behind U-boat construction yards, the German aircraft industry and various transportation targets. Buffon had provided considerable input into the

Casablanca Directive but it is evident from notes prepared in the Directorate of Bomber Operations that staff there still held little hope for a successful bombing campaign against oil. They appreciated that the bulk of Germany's oil supplies came from Ploesti, backed up by increasing production from synthetic refineries in Central Germany and the Ruhr. It was their opinion that until German imports of crude oil from Romania could be substantially reduced, attacks on synthetic plants should be held in abeyance.²⁶

There were, of course, other valid reasons why attacks on oil installations were considered unprofitable. Firstly, Harris refused to accept that his crews had the equipment necessary to locate and accurately bomb small precision targets. Secondly, Bomber Command was encountering improved enemy defences – particularly night fighters. It was for this reason that the German aircraft industry had appeared as the second priority target on the current Directive.

In April 1943 the Air Staff agreed that attacks against oil should be deferred until the land war in North Africa had ended and the Path Finder Force had gained further experience with the use of H₂S and Oboe. They were also concerned that the hours of darkness in spring and summer were insufficient to guarantee success. Although short range targets were available, they argued that “it will not be possible by the attack of the synthetic oil plants alone, to deny to Germany the minimum quantity of oil necessary to have a major effect on her operations and strategy.”²⁷

In June 1943 the *Pointblank* Directive was issued. Oil still held fourth position but this time following ball bearings. Again the argument was repeated, that German supplies of petroleum and synthetic oil products were barely sufficient to meet the enormous demands. Russian sources, of course, had long dried up, but the argument now was that if Ploesti and the synthetic plants in Germany could be destroyed, then Germany would be in a parlous condition. However, the major thrust of *Pointblank* was to attempt to bring about a reduction of strength of the German day and night fighter forces.

The following month, Air Commodore Bufton, Director of Bomber Operations since March 1943, reconfirmed his preference for the elimination of factories in Germany producing fighter aircraft. He specified those located at Regensburg and Wiener Neustadt.²⁸ Their destruction, by American heavy bombers based in North Africa, the Directorate believed, was a pre-requisite

before attacks on either Ploesti or the synthetic oil plants in Germany could be considered. What was feared was that a partial success at Ploesti could engender American demands to ignore *Pointblank* and bring oil to the forefront. At this stage of the war the Directorate's argument was that enemy fighter strength posed a greater threat to the bomber offensive than the possible gains to be made by any destruction of German oil facilities.²⁹

Buften's arguments were supported by the MEW. Their belief was that no matter what destruction was achieved at Ploesti, any reduction in supply would fall

last of all on the G.A.F., and more particularly on its fighter force. Even if the operations should be so successful as to produce an effect on the enemy's supply of aviation fuel, it would represent a very indirect method of attacking the enemy's fighter strength, an infinitely less direct and certain method than the attack on key aircraft factories.³⁰

Many of the arguments offered by Buften and Morley were included in a letter by Bottomley to Major General Ira C Eaker, Commanding General, Eighth Air Force, calling for the deferment of the attack on Ploesti.³¹

Buften was also asked to prepare a draft signal along the same lines as Bottomley's letter, to be sent to the Royal Air Force delegation in Washington. Within this signal calling for the postponement of operations against Ploesti, Buften quoted a message from Air Chief Marshal Sir Sholto Douglas, the newly appointed AOC Middle East Command, to the equally newly appointed AOC Mediterranean, Air Chief Marshal Tedder. Douglas confirmed that he had studied the plans for further attacks on Ploesti under the code name *Tidal Wave*, and discussed the problems directly with the unit commanders involved. It was his firm opinion that

a sufficient degree of destruction is most unlikely repeat unlikely to be achieved by a single low level attack. Our present assessment is that after one successful low level attack at least 5 further successful high level attacks will be required to achieve desired results.³²

Early in November 1943 Geoffrey Lloyd, Secretary for Petroleum, addressed a minute to the Prime Minister. It was his considered opinion that

Germany's oil situation was approaching crisis point. Bufton, after reading this minute, agreed that if the information it contained could be confirmed, then a very strong case existed for concentrated attacks to be made against German oil targets. It would, however, require a diversion from the offensive against the German fighter industry. The danger was that any failure to reduce the threat posed by German fighters could mean that operations against any class of target might be prejudiced. Bufton made it clear that he believed the battle hung in the balance. In an effort to swing the balance in the Allies favour, he opted for the continuation of the attack against the fighter aircraft industry. If the threats from *Luftwaffe* fighters could be reduced, then the way would be opened for attacks on other elements of the German economy of which oil was, perhaps, the most important.³³

Bufton also provided his view of the other options. If it was decided that oil should be the primary target, then Bufton suggested that it would be best if operations were limited to Ploesti. Raids against that target, he advocated, should be the responsibility of the Mediterranean based air force. He pronounced himself against any notion of giving oil a higher priority than the enemy fighter and aircraft component factories for the bomber forces based in the United Kingdom. He believed that oil targets within range of British based bombers were tactically difficult, heavily protected, and would be an uneconomic diversion. Bufton concluded:

our primary aim must remain the G.A.F. fighter force. If the Axis oil position is confirmed to be as critical as is suggested, it might well be attacked on second priority. Any resulting reduction in Axis oil supplies would increase the difficulties of the G.A.F. and thus hasten the time when a greater proportion of the bomber effort could be diverted to oil objectives.³⁴

At the end of November 1943, after a further examination of the Lloyd minute, Bufton confirmed again with Bottomley that he had found nothing in the paper to cause him to change his mind regarding bombing priorities. His opinion remained that the German aircraft industry, particularly the fighter area, should be attacked before consideration was given to oil targets. Nevertheless, with the German oil position assessed as critical, and with heavy bomber bases available in southern Italy, he agreed that an attack on Ploesti, provided it was without

prejudice to the attack of German Air Force targets, "would have a considerable effect on Germany's oil supplies."³⁵

Thus, at the end of 1943, an air of indecision still hung over the question of German oil targets. Certainly for the first two years of the war they had been beyond the means then possessed by Bomber Command because the crews were largely incapable of locating small targets by night and there were insufficient aircraft for the many tasks requiring attention. Bomber Command expansion was still slow; insufficient consideration had been given to the urgent demands for refined navigation and bombing equipment; and diversions of the bomber effort were a frequent occurrence. Bomber Command, developed as an offensive weapon, had been largely employed on defensive activities. Similar conditions had continued into 1943 and by now it had become all too evident to hard-pressed crews that German night fighters and the extensive defensive network employed by the *Luftwaffe* was reaping a heavy and barely sustainable toll.

Two aims had been developed for Bomber Command by 1943, although only one remained constant and that was the attempt to lower German morale through the incidental suffering caused by the attack of one specific element of Germany's war-making capacity. The latter, of course, had been shown to have been a variable quantity and had passed through many stages from oil to communications, back to oil, but by 1943, under the terms of both the *Casablanca* and *Pointblank* Directives was focussed on the U-boat and German aircraft industries. In 1941 bomber losses had averaged 2.5 per cent of all sorties flown but by 1942 this figure had increased to four per cent and was threatening to continue to rise. Should the average loss rate exceed five per cent (and German night fighter production was expected to double in 1943), then the promised Bomber Command expansion would never occur. Bufton had not been alone in the recognition of the threat posed by the enemy fighter forces.

By March 1944, however, Bufton was having second thoughts. But before committing himself to a plan proposed by the Americans, to accord oil top priority, he called on the Director of Intelligence in the Air Ministry and Lawrence in the MEW, to provide their independent views. He admitted that he had opposed any suggestion of increasing the bombing effort against oil on at least two occasions in the preceding six months, but was now prepared to consider changes. Considerable progress had been made, he believed, in reducing the effectiveness

of the German fighter forces. In these circumstances the American heavy bombers' ability to penetrate to oil targets would have been greatly enhanced. "We think" he confirmed, "the time has come when the attack of oil will be fully justified if the prize is sufficient to warrant the task being undertaken."³⁶

The following month detailed Target Information Sheets were issued by the Air Intelligence Branch concerning the synthetic oil producing plants using the *Bergius* process at Leuna near Merseburg, and Pölitz, near Stettin. Brief details were also given on another twenty plants employing the same process.³⁷

On 25 May 1944 Oliver Lawrence of the Enemy Branch of the MEW, who had spoken against an oil target bombing programme as a pre-*Overlord* tactic as recently as 25 March,³⁸ produced a paper extolling the virtues of oil as a target. His conclusion was based on three assumptions. Firstly, that *Overlord* had been successfully launched and that a bridgehead had been established capable of withstanding German counter attacks; secondly, that night attacks against German targets would be limited to an area in the quadrilateral bounded by Wesel, Hamm, Aachen and Cologne; thirdly, that the primary objectives of the bomber forces should remain as in the *Pointblank* Directive.³⁹

Within the designated area, Lawrence listed ten synthetic oil plants estimated to produce eleven per cent of the Axis oil requirements. Because of the damage already created by the Americans at Ploesti, and at German synthetic plants,⁴⁰ it was believed that an average of one month's supply had been denied to the German authorities. This equated to a deficit of 65,000 tons per month, or five per cent of current consumption. With the opening of the Second Front and the resumption of the Russian offensive, it was calculated that military consumption of oil products would increase by 150,000 tons per month. If further damage could be created, then the increased deficit would so eat into the normal fuel reserves that military supplies would have to be reduced, thus causing a significant loss of operational capability.

Lawrence's conclusion was unequivocal:

There is no question that at the present time the destruction of the major synthetic oil plants in the Ruhr would do more to embarrass the enemy's military operations than the destruction of any other targets in this area . . . The attack of at least four major synthetic plants . . . therefore demands the most serious consideration as a primary objective . . . No other target system

accessible in this area offers the same prospect of rapid and decisive results.⁴¹

Buften was converted. Intelligence sources suggested that the German reactions in the air, and in the increased *flak* defences, indicated their fears created by the attacks on oil. The Americans were calling for a combined plan. They would bomb plants in central and northern Germany by day leaving Bomber Command to attack, by night, the more heavily defended and difficult to locate refineries in the Ruhr. Buften was aware that the attack of precision targets in the Ruhr was a departure from what hitherto had been current policy: but he also believed there was ample justification. With summer approaching, the short nights would confine Bomber Command's operations very largely to the Ruhr and Rhineland areas. Because of the devastation already created in this region, city centres no longer provided profitable targets. There were four major oil plants in the area, all within range of the Oboe bombing and marking system, the accuracy of which had been well displayed on previous occasions in the Ruhr. Finally, 5 Group in Bomber Command had recently developed a low level marking technique that offered the chance of improved bombing results. Although the risks in heavily defended areas were appreciated, the prospects of success, Buften pointed out, warranted an investigation as to whether or not the system could be employed in the Ruhr.⁴²

Buften recommended that Bomber Command be invited to assess whether or not the four major plants were considered viable targets. If it was decided that they could be attacked successfully, he declared, they should be given first priority in the Ruhr/ Rhineland industrial complex. From the results obtained, a decision could then be made whether to extend the scope of the oil offensive.⁴³

On 3 June 1944 Bottomley actioned Buften's suggestion. He asked Harris for his views

as to the possibility of launching successful attacks against firstly the four major synthetic oil plants, and secondly the six remaining plants, and as to whether you could undertake these attacks as soon as the "Overlord" situation permits the attack of purely strategic targets.⁴⁴

An early reply was requested.

It is hard to imagine that Bottomley's request was well received. Harris had much on his plate. On 14 April 1944 the direction of the American and British bomber forces had passed to General Dwight Eisenhower, the Supreme Commander, in preparation for *Overlord*. Eisenhower had delegated responsibility for strategic bomber matters to the Deputy Supreme Commander, Air Chief Marshal Tedder.⁴⁵ Harris thus had a new master; he was no longer answerable directly to Portal. Despite his initial opposition to the bombing programme in preparation for the landings on the continent, Bomber Command crews had been kept fully occupied in attacking transportation targets in Belgium, north-west France, and the Aachen area in Germany. The arguments relating to this campaign are fully discussed in the previous chapter.

Harris had long argued that should the bomb tonnage dropped on Germany fall below 10,000 tons per month, then war production would inevitably increase. Should the bombing of Germany cease entirely, he claimed, war production would return to normal within five months.⁴⁶ In the period April to June 1944 pre-invasion bombing consumed 69.4 per cent of Bomber Command's effort. Only 17.4 per cent had been devoted to targets in Germany. Although these figures meant that 14,015 tons of bombs had been aimed at targets in Germany in April, the figures for May and June were only 8,547 tons and 4,902 tons.⁴⁷

Despite all the distractions, Harris, in a note to Sinclair on 13 June,⁴⁸ accepted Bottomley's request of 3 June and also advised Air Vice-Marshal Bennett of the Path Finder Force Group that the ten synthetic oil plants in the Ruhr were to be added to his list of Precision High Priority Targets. "There is plenty of evidence now" he informed Bennett, "that the enemy is concerned with his oil position and these plants produce nearly a third of his total synthetic production."⁴⁹ Perhaps he saw this new programme, because of the collateral damage that might be created, as a way to the resumption of area attacks.

Four attacks were carried out by Royal Air Force heavy bombers against oil targets in June 1944. Two involved about 300 aircraft, while the other two were by smaller forces averaging about 130 aircraft. In addition, there were six other attacks involving only Mosquitoes. A further six attacks were carried out by Mosquitoes during the first five nights of July. Bufton, in a note to Portal, warned that

Not only because of the intrinsic importance of these plants, but also in the interests of the prestige of the R.A.F. vis-a-vis the Americans, I consider it of extreme importance that Bomber Command should achieve success against the Ruhr plants without delay. The urgency of the task is such that the Americans must destroy them if Bomber Command do not.⁵⁰

Later in July, following further attacks on oil targets by Bomber Command and the Eighth and Fifteenth Air Forces, Bufton was even more positive. "Oil targets" he asserted,

are highly vulnerable to bombing our attacks are having a high rate of success the Axis oil position is steadily becoming more acute to exhaust the German strategic reserve . . . we should make every endeavour to put out of action simultaneously as many synthetic plants and refineries as we can all possible effort should be directed to the widespread destruction of the sources of Axis oil production over the next 30 days.⁵¹

Bufton was not alone in his assessment of the damage being done to the German oil industry by Allied bombing. Albert Speer, the German Armaments Minister, in reports to Hitler in June and July 1944, drew his leader's attention to the dangerous oil situation which he believed was developing. In June he called for a reduction in flying hours to conserve supplies; strict measures to control consumption of carburettor and diesel fuel in the *Wehrmacht* ; increased fighter and *flak* protection for the synthetic plants, even at the expense of the cities; as well as improved smoke screen units for the fuel plants and the dummy plants that had been erected to mislead bomber crews.⁵²

One element of the oil offensive section of the Combined Bomber Offensive often over-looked, but which should not be ignored, was the part played by the American Fifteenth Air Force and 205 Group, Royal Air Force, operating from Italian bases near Foggia from early 1944. They served under the generic title of the Mediterranean Allied Strategic Air Force (MASAF), commanded, from January 1944, by Lieutenant-General Ira Eaker. The American element was a large establishment comprising sixty Liberator and twenty-four Flying Fortress squadrons, plus many fighter squadrons. No 205 Group was small, consisting of nine squadrons – six Wellington, two Liberator, and one Halifax.⁵³

Their tasks were wide-spread, covering enemy rail communications in Hungary and Romania in order to provide assistance to the Russians on the Eastern Front, industrial targets in Southern Germany and Austria, shipping and port installations in Italy, oil refineries, and mining the River Danube. Unfortunately, General Sir Harold Alexander, C-in-C Allied Armies in Italy, considered that the MASAF, with a bombing programme that appeared to bear no direct relation to his own military operations, was “more a liability than an asset.”⁵⁴ The supply problems the force created placed an enormous strain on his already scarce shipping capacity. But, what Alexander had to remember, was that one of the reasons for launching the invasion of Italy had been not only to secure bases from which a bombing campaign could be initiated against targets in the Axis soft under-belly, but also to enable the air forces to provide closer support for his armies.

The first operation by 205 Group against oil was on 8 April 1944, when mines were laid in the River Danube. The Danube, of course, was a river vital to the German economy. It provided not only for the transfer of agricultural produce, but also was a strategic route to the Balkan flank of Germany's Eastern Front. It was also Germany's life-line for the importation of Romanian oil. The barges involved in oil transshipment would each carry a load equivalent to one hundred ten-ton rail wagons and were thus an important target. Mining was carried out at low-level, in moonlight conditions, by both Wellington and Liberator aircraft. Between April and early October 1944 a total of eighteen operations were completed; 1,382 mines were laid, each weighing 1,000 pounds.⁵⁵

In May 1944, contrary to General Alexander's dismissive opinion, MASAF's efforts were directed primarily against “technical targets in support of the Allied offensive against Rome.”⁵⁶ In June, however, the concentration turned again to oil. Refineries in Trieste, Yugoslavia, Hungary, and Romania, became the targets for both Air Forces. One notable feature of these attacks was that the two elements of the MASAF co-operated; night raids by 205 Group were often preceded by day strikes by the Fifteenth Air Force. Thus it accorded closely with the requirements laid down in the *Pointblank* Directive of 14 May 1943 which had called for a joint United States/British air offensive. Without specifying Bomber Command's major effort, the instruction noted that “when precision targets are

bombed by the Eighth Air Force in daylight, the effort should be complemented by R A F bombing attacks against the surrounding industrial area at night.”⁵⁷

From the beginning of April 1944 to the end of August 1944 the Fifteenth American Air Force carried out a programme of major bombing attacks on targets in the Mediterranean theatre. Many were against oil targets and, by June 1944, of the sixty odd refineries within 700 miles of Foggia, twenty-nine had been bombed.⁵⁸ During the same period 205 Group also carried out a series of bombing attacks, several complementary to American attacks, and many relating to oil — either mining the Danube, or striking at facilities. Operations were intensive and, during June 1944, 205 Group operated on twenty-two nights dropping 2,000 tons of bombs and distributing 20,000,000 leaflets for the loss of thirty-four crews.⁵⁹ Indicative of the difficulties and the strength of the defences to be overcome in the Mediterranean theatre, while Eighth Air Force losses in June, July and August 1944 totalled 842 heavy bombers, the Fifteenth Air Force (half the size of the Eighth) suffered an even higher ratio of losses.⁶⁰

By July 1944 oil targeting had become streamlined. Oil experts had been added to the Allied Central Interpretation Unit at Medmenham and this unit reported daily to the Directorate of Bomber Operations and the Intelligence staffs at both Air Ministry and the equivalent American authorities. Thus, within twenty-four hours of an aerial reconnaissance of potential oil targets, their status was confirmed and the appropriate target selections completed. In addition, the Joint Intelligence Sub-Committee was instructed to prepare, each fortnight, their appreciation of the results of the attacks on oil and their assessment of future requirements.

Accurate and up to date information on the oil and fuel situation in Germany was also available, at this stage of the war, from Signals intelligence. This resulted from the interception, analysis, and decoding of messages passed between German units on supposedly safe lines. This source included *Enigma* transcripts and material passed on diplomatic lines between the Japanese ambassador in Berlin and his superiors in Tokyo. The distribution of this information was, however, kept within narrow bounds to prevent the Germans learning that many of their codes had been broken. Portal was privy to at least some of this information and presumably some filtered down to Bufton. Harris did not start receiving *Ultra* material until 7 June 1944.⁶¹

One example will suffice to demonstrate the vital nature of this material. An *Enigma* message on 5 June 1944 between *Luftwaffe* High Command and the First Parachute Army based in France was intercepted, decoded, and in Portal's hand only two days' later. The message advised of a shortage of aviation fuel caused by Allied bombing. All units, except those engaged in flying training, or operations against the enemy, were advised that their expected allocation of general aviation fuel for June would not be available. Furthermore, no decision had been made concerning either the fuel allocation for July, or the date on which it could be expected. To meet immediate defence requirements, it had been found necessary to draw supplies of aviation fuel from that earmarked as part of the strategic reserve for the *OKW* (*Oberkommando der Wehrmacht*).

Portal, in a note to Churchill concerning this signal, declared that he regarded it as

one of the most important pieces of information we have yet received I think that there is little doubt that in the light of this appreciation the strategic bombers should be turned over to synthetic oil plants as soon as *Overlord* can spare them I shall suggest that we should wait a little and then choose a period of fair weather to concentrate the whole force on these targets.⁶²

In August 1944 Bufton, who had access to the weekly reports issued by the Joint Intelligence Sub-Committee of the Chiefs of Staff, increased his calls for a greater concentration of bombing on German oil targets. The claimed critical shortage of oil fuel in Germany was sufficient confirmation for him that any further reduction in supplies could well precipitate military disasters for Germany on both her Western and Eastern fronts. The evidence provided in the latest report showed, he contended, that "there may be no way of so rapidly bringing enemy resistance to an end as an immediate intensification of our air attacks upon his oil supplies."⁶³ He called for an overriding priority to be accorded oil targets for both the British and American heavy bomber forces. Area attacks by Bomber Command on cities, he argued, had little effect on German oil supplies and the effort could be much better employed. Germany, he suggested, had no shortage of either aircraft or crews but further attacks against oil targets would severely restrict their activities.

Buften also drew Bottomley's attention to a paper produced by the Working Committee of the Joint Oil Target Committee. This paper claimed that, provided the Russians were able to cut off German oil supplies from Romanian, Polish and Estonian sources, and even assuming that there were no further bombing attacks, Axis oil supplies for September 1944 would only reach forty-eight per cent of the total oil requirements. Furthermore, the paper next insisted that "the Strategic Air Forces now have an opportunity within the next few weeks of bringing the war to an end through the attack of enemy oil supplies alone."⁶⁴ Buften was in full agreement. He advised Bottomley that he thought that a special direction should be given to the Strategic Air Forces to this effect and offered to prepare a paper in consultation with his American opposite number.

Bottomley agreed that the time appeared opportune but reminded Buften that the bomber forces were still under Eisenhower's control. Only after the current Directive had been revised by the Combined Chiefs of Staff could the action suggested by Buften be considered. Bottomley also rejected Buften's time frame regarding the early end to the war. Instead, he suggested the wording should be that

we are presented with an exceptionally favourable opportunity in the next few weeks of imposing on the enemy a critical situation in his war economy which if exploited to the full may prove decisive to our efforts.⁶⁵

At the end of August 1944 Speer addressed another report to Hitler concerning the severe shortages in liquid fuels to be expected in September, and the damage done to the entire German chemical industry by Allied bombing. These reports possibly provide a more accurate picture than some of the material that appeared in his post-war books. In 1944 Speer had but one master to appease. By 1969 he was trying to satisfy not only the German people, but also his American and British masters. His August 1944 report noted that there was only one hope. If the Allied air raids on the facilities were not resumed for three weeks, the chance existed for the German fighter forces to recoup and prepare to face the next onslaught. *Flak* defences by themselves were not enough. If the *Luftwaffe* can successfully be expanded and revitalised, he asserted, it could be "the beginning of a new air force or it will mean the end of the German air force."⁶⁶

Throughout September 1944 Bufton continued his calls for even greater attention to be paid to targets within the German oil industry; “efforts” he asserted, “should be intensified to exploit this spreading crisis.”⁶⁷ A fortnight later he was lamenting the disappointing bombing results achieved in the period 10-14 September. These, he admitted, could be attributed to improved German defences, indicative of the seriousness with which the Germans viewed their deteriorating oil position. Every advantage must be taken on every fine day or night and there must be no let-up. “If any diversion of effort from oil targets is permitted,” he concluded, “the enemy may be enabled by his desperate measures of economy in consumption, and in the repair and protection of his productive installations, to escape breakdown.”⁶⁸

By July 1944 concern was being expressed by Portal and Bufton over the divided control of the strategic bomber forces. The arrangement had been that once the Allied forces were firmly established on the Continent their direction would be reviewed. Portal acknowledged in one paper that “new developments have arisen which make it desirable that the direction of the strategic bomber forces should revert to the Chief of the Air Staff acting as agent for the Combined Chiefs of Staff.”⁶⁹ Eisenhower, however, appeared in no particular hurry to vary the control arrangements. Late in August, in a signal to the Combined Chiefs of Staff, he had insisted that there would be no change in the current system of air control. Despite his possible opposition, on 16 September 1944, as detailed in the *Overlord* chapter, the *status quo ante* was restored, Portal and the Air Staff resuming direct control of Bomber Command.

The reversion of authority may have appeared simple but in reality there were problems, also considered earlier in Chapter Six. The decision was taken primarily because Eisenhower had moved his Headquarters to France and therefore close co-operation with the Air Staff was difficult. Although the Americans, perhaps not surprisingly, had not sought changes, the decision was in accordance with the desires of both the Air Staff and Churchill himself. A feeling had developed, certainly in the JIC and the Directorate of Bomber Operations, that for too long the designated bombing priorities were being ignored by Harris.

On 25 September 1944 Harris and General Spaatz received their new Directive. They were informed that after due allowance had been made for weather and tactical possibilities, their first priority target was the German

petroleum industry with special emphasis on petrol and associated storage facilities. Second priority was the German rail and waterborne transportation systems, tank factories and storage areas, ordnance depots, and finally, motor vehicle factories and storage areas. Their overall mission remained “the progressive destruction and dislocation of the German military, industrial and economic systems and the direct support of the land and naval forces.”⁷⁰ Morale as a specific target, which had disappeared after the Directive of 10 June 1943, was again not mentioned.

An examination of the *Bomber Command Quarterly Review* for the period July - September 1944 confirms the Air Staff's concern that too little of Bomber Command's enormous effort had been concentrated on oil targets. Army support, transportation, ‘V’ weapons, airfields, ports and ships, and sundry other targets had taken up no less than sixty-nine per cent of the total bombing effort. Industrial cities, which meant area attacks, had taken up twenty per cent, while oil received only eleven per cent.⁷¹

Perhaps it was time that the direction of Bomber Command came more under the control of the Air Staff. Unfortunately, the change of master did not necessarily imply that there would be vast changes in the targets attacked. As Harris pointed out in a post-war interview, not even Portal appreciated “the difficulties of finding any particular place in the dark and hitting it . . . What you should have attacked was a very different thing to what you could attack at any particular moment.”⁷²

Buften, however, was unrelenting in the pressure he applied in an effort to increase the bombing of oil targets. In a note in October 1944, addressed to A.S.P.1, he stressed the deteriorating position that Germany was finding herself in because of air attacks over the past few months:

Unimpeachable evidence is received daily of the very great effect which the resulting oil shortage is having upon the enemy's ability to conduct military operations . . . the Strategic Bomber Forces could make no greater contribution to the Allied land offensives, not only on the Western Front, but equally on the Russian and Italian Fronts than by preventing the enemy's oil production rising above its present level or, if possible by reducing it.⁷³

He admitted that winter flying conditions would make the tasks facing the bomber crews more difficult. For that reason, he argued, it might be necessary to apply the entire visual bombing effort against oil targets.

Concurrently with the pressures he was applying for an increase in the bombing effort against oil, Bufton was also attempting to appease those still calling for attacks upon communications. Tedder, the Deputy Supreme Commander, was perhaps, the foremost. On 30 September 1944 a meeting was held at the Air Ministry, chaired by Bufton, to consider the best means of employment for the Allied Air Forces for an operation code-named *Hurricane*. Colonel Maxwell, one of the American participants, explained that it was his belief that Bottomley and Spaatz's call was for an all-out blow against Germany in the immediate future. There were two essentials. It had to be a maximum effort and there was the requirement to select a particular target system. In Maxwell's opinion that target should be oil.⁷⁴

Group Captain Lucas, from Tedder's Headquarters in France, disagreed. He argued that oil provided a limited number of targets and because of this limitation the operation was rendered susceptible to weather. A better option, he suggested, would be rail communications. By attacking a wider range of targets the strength of Allied air power would be displayed to a larger German audience.

Bufton protested that it was somewhat short of the mark to claim that oil only provided a limited number of targets. There were ninety on the current priority list and their wide distribution meant that vagaries in the weather could be well covered. Oil, he claimed, must have overriding priority. There was only a limited amount of visual bombing available, insufficient to permit attacks on both oil and transportation systems.

But Bufton was well aware that widespread attacks on oil did not meet the call for a demonstration of Allied air power that had as its main features concentration in both space and time. Only the Ruhr offered this prospect. He proposed that the whole of the Eighth American Air Force, on the first fine day, should attack oil targets in the Ruhr. Bomber Command, at night, would attack previously undamaged selected areas in major industrial cities in the Ruhr. At the same time, the Tactical Air Forces would attack rail communications surrounding the Ruhr. The next day, weather permitting, the same programme would be repeated.⁷⁵ It is clear from the minutes of this meeting that Bufton's plan was one

that provided minimum interference with current bombing policy. After further discussion, it was agreed that a plan along Bufton's lines would be prepared for consideration by the Allied Air Staffs.

A Directive for *Hurricane I* and *Hurricane II* was issued to Harris and Spaatz on 13 October 1944. The second plan, an American afterthought, provided for precision attacks against a wide range of targets right across Germany.⁷⁶ In modified form, *Hurricane I* was carried out against Duisburg on 14 October and the same city was bombed again the same night. Essen was attacked on the night of 23/24 October 1944 and thirty-six hours later received another pounding. The Directive was eventually cancelled on 19 January 1945.⁷⁷ By this date it had become apparent to the Air Staff that the continued concentration on Ruhr targets, where enormous damage had already been created, was not going to reduce the increasing threat posed by the *Luftwaffe* fighter force and particularly its jet production, training, and operational facilities.

On 25 October 1944 Tedder, having viewed a German document detailing the success of Allied bombing of German communications, issued a paper giving his opinion as to how air power should be used to bring the war to an early end. The primary target, he insisted, should be the German road, water, and rail communications. Oil, he attested, was the key to road and air communications and thus his selected target systems were interlocked and interrelated. He called for a concentration on targets in the Ruhr and claimed that

a coordinated campaign against the communications system of WESTERN GERMANY such as I have outlined would rapidly produce a state of chaos which would vitally affect not only the immediate battle on the West Wall, but also the whole German war effort.⁷⁸

During October 1944, with winter approaching, concern was being expressed in several quarters that German oil production might well increase because weather conditions could prevent damaging bombing attacks. At the Chiefs of Staff meeting on 17 October 1944 a report from the Joint Intelligence Sub-Committee was considered which stated that there "was further unimpeachable evidence of the enemy's critical oil situation."⁷⁹ The question was, with the likelihood of deteriorating weather as winter approached, whether oil production could be kept down to the twenty-five per cent of the pre-attack level

that had been achieved during the preceding September. One main hope was that increasing losses of German-held, oil-bearing territory, in conjunction with the declaration of war by Romania on Germany, her former ally, on 23 August 1944, could well counterbalance any improvement in local production due to reduced bombing. The main need was to concentrate the oil offensive on the Ruhr area which had become the "most important oil producing area available to the enemy."⁸⁰ On 18 October 1944 the CSTC, under the chairmanship of Bufton, held its first meeting. Bufton seized the opportunity to warn the members that, on the evidence available, there was a "danger of falling behind in the essential task of restricting the enemy's oil supplies for October to the September level."⁸¹

On 30 October, Morley, now working in SHAEF, reminded Tedder that the Ruhr, with forty per cent of the synthetic oil resources available to Germany, remained the critical area. In the past, he noted, all too often, the respective Bomber Commands have done "no more than pay only partial heed to the agreed aim under cover of 'operational limitations.'"⁸²

With a darkening cloud about to develop over the Portal/Harris relationship it is time to take stock of the force available to AOC-in-C Bomber Command at the end of October 1944. Very considerable expansion had now taken place and, although the improved performance MkIII Halifaxes continued in the front line, Lancasters dominated among the heavy bomber squadrons. During October, November and December 1944 no less than eleven additional Lancaster squadrons were added to Bomber Command's front line strength. Moreover, the Path Finder Force was now a finely tuned weapon despite Harris's efforts at its emasculation by the removal of two Lancaster and one Mosquito squadron in April 1944, ostensibly on temporary loan to No 5 Group under Cochrane. In addition, following the establishment of Oboe and G-H stations on the continent, the effective precision range of the bomber force had been significantly increased. Many small targets previously beyond Oboe and G-H range could now be accurately attacked rather than being treated as area targets. Harris, unfortunately, obsessed with his vision of the destruction of German cities, and apparently unwilling or unable to accept the accurate bombing which his crews were now capable of, appeared largely to continue to believe that area bombing provided the path to victory. He was wrong.

By late 1944 all of Germany was under threat from the Combined Bomber Offensive. The Path Finder Force (PFF) employed several target marking systems largely dependent on the weather conditions forecast for the target. *Newhaven* ground marking meant that the target was located by H₂S equipped Blind Illuminator crews who, six minutes before the attack was due to start, illuminated the target area with sticks of flares. Visual Marker crews, by the light of these flares, then selected the precise aiming point and marked it with salvoes of target indicators (TIs) for the benefit of Main Force crews.

Parramatta, or blind ground marking using H₂S, was employed when conditions were expected to be unsuitable for visual marking, but when it was believed that the ground markers would be visible. Normally this system was only employed against large targets such as Berlin. The Backers-up crews then had to assess the mean point of impact (MPI) of the red TIs released by the Primary Blind Markers, and mark that point with green TIs for the Main Force. Should Oboe be employed in either *Newhaven* or *Parramatta* attacks then the prefix “*Musical*” was added to the name of the attack. In *Musical* attacks a Master Bomber and a Deputy were employed to assess the accuracy of the markers, define the aiming point, remark the target if necessary, and control the raid.

The final, rather inaccurate PFF method was called *Wanganui* sky marking, employed when cloud obscured the target. Sky marker flares were released by PFF aircraft, normally using H₂S, and they burned red with green stars or green with red stars. Main Force aircraft flying on the heading given at briefing, aimed to hit the centre of the flares — the theory being that provided the bombing aircraft was on the precise heading, with zero wind on the bomb sight, that the flares had been accurately placed, then the bombs would strike the target.

On 1 November 1944, in a letter to Harris, Bottomley advised him that “the maximum effort is to be made to maintain and, if possible, intensify pressure on”⁸³ the enemy petroleum industry and Germany’s oil supplies. An enclosure with this letter, Directive Number 2, was issued to the Strategic Air Forces in Europe. The German petroleum industry was accorded first priority and communications, especially those in the Ruhr, second.⁸⁴

Responding to Bottomley the same day, Harris fired the first of his broadsides in what was to become an increasingly bitter paper war with his superior, Portal. It appears that two events triggered his reaction: he had been

upset by Tedder's paper and he also resented Portal's enquiry as to why he had seen fit to launch an area attack on Cologne on the night of 31 October/1 November. He dealt at length with Tedder's paper. He rejected any suggestion that the war had not been shortened by Bomber Command's area attacks. Furthermore, he argued, had there not been so many diversions it would have been even more shortened. He admitted the need to compromise over the question of how best to assist the armies and at the same time continue an effective bombing programme. But, Harris insisted, the targets suggested by Tedder were the very targets his bombers were already attacking.

The major difficulty in building up the bombing offensive into a cohesive pattern, Harris complained,

is the number of cooks now engaged in stirring the broth. During the last few weeks every panacea monger and 'me too expert' to many of whom we had already (we hoped) given the quietus in the past, has raised his head again. The Tirpitz has got within range and the Admiralty has resuscitated a U-boat threat. The ball-bearing experts have again become vocal . . . and even the nearly defunct S.O.E. has raised its bloody head and produced what I hope is now its final death rattle — 'BRADDOCK'.⁸⁵

With regard to Cologne, Harris provided eight reasons for yet another area attack. He then reminded Portal that in the previous eighteen months Bomber Command had virtually devastated forty-five of the sixty major German cities. Why, he questioned, should the task be left incomplete? He also provided a list of ten cities, including Dresden, yet to be destroyed. Furthermore, he concluded, the destruction of Berlin and Hanover still remained to be completed.

Buften was asked by Portal to comment on Harris's reasons for attacking Cologne rather than oil targets in the Ruhr and he provided the ammunition for Portal's somewhat placatory reply. All he required, Portal pointed out, was one good reason for the recent heavy attacks on Cologne. When eight were provided, considerable doubts were raised that all were equally good. Harris's claims regarding weather were rejected by Portal and, in his opinion, Gelsenkirchen, at an equivalent distance and in the same approximate area, would have been a better choice. Gelsenkirchen would have been selected, suggested Portal, "if the greater importance of the Ruhr and its oil had been fully recognised".⁸⁶

When he came to complete his reply to Harris's letter, Portal had even more ammunition. Overnight Harris had launched 749 aircraft, in clear weather, against Bochum, yet another non-oil target. Why, questioned Portal, was Bochum chosen and not Gelsenkirchen? The latter had a large relatively undamaged built-up area and two high priority oil targets. Portal insisted that he did not want to give the impression that he was either interfering or criticising but, at the risk of being dubbed, "another panacea merchant,"⁸⁷ there were several questions to which he required answers. He admitted that it was not an easy letter to write but his belief that the offensive against oil gave the best prospects for victory in the short term, required that Harris was aware of what was at stake. "Having risked your wrath already" he continued,

and in pursuance of my strong desire that we should understand each other may I ask you to let me know why you think I am wrong on this particular point. It may be of course be that you are relying on G.H.⁸⁸ by day for the destruction of oil and that you intend to concentrate on area attacks by night even in clear weather. If you tell me this is so it will enable me to follow your operations much more intelligently though I do not say now that I should agree with the policy without further study I feel that the whole war situation is poised on 'oil' as on a knife edge and that by a real concentration of effort at this time we might push it over on the right side.⁸⁹

Harris responded immediately. In a three page letter he claimed that he fully appreciated both the urgency and the effectiveness of the oil plan. His constant endeavour, he protested, was to obtain the best results possible from every sortie. However, he continued,

oil targets are small and usually outlying . . . we have always regarded it as virtually fruitless to attempt to attack them unless one can get a visual by day or a visual on ground markers laid by Oboe or G.H. at night.⁹⁰

Oil is my preferred target, he averred, but only when conditions in the Ruhr offer good prospects for a successful attack.

He admitted that he was unaware of all the intelligence sources used by the Target Committee regarding Germany's oil production, but questioned the very precise production percentages provided. His expressed hope was that the

figures were correct and that the results would justify the losses experienced in attacks that “may prove to have been more frequent than necessary to fulfil the required purpose.”⁹¹

Harris pleaded that weather conditions were the reason for not having attacked Gelsenkirchen. It was a difficult target to locate, he pointed out, and in problematic cloud and visibility conditions offered few prospects of success. Recent photographs of the oil plants in the city, he continued, showed no signs that they were again in operation. His understanding of the Directive was that oil plants were to be put out of commission and kept unserviceable but not necessarily totally destroyed. He warned:

If in fact the intention is now to go on flogging them even while they are temporarily dead horses until they are utterly destroyed, that puts a different complexion on the matter and opens up a vista of additional losses and loss of effort in every direction which I seriously doubt whether we can stand in the light of the reductions now taking place in the training output on the one hand, and the tremendous calls for increased bombing effort on the other.⁹²

The suggestion by Portal that the vital importance of the oil war had been misunderstood, was rejected by Harris. His Operations Room staff, Harris pointed out, had standing orders that any oil plants in the Ruhr that showed signs of resuming production were to be immediately brought to his notice. He then sought clarification. Were oil targets to be obliterated, and thereby increase bomber losses and required effort, or were they simply to have their productive capacity brought to a standstill, and kept in that state?

On receipt of this latest letter from Harris, Bufton was again brought into the discussion. Portal requested him to comment on the correspondence recently received from Harris concerning the bomber offensive. Bufton’s examination was thorough: his comments ran to over three pages. His first criticism was Harris’s statement that he aimed to achieve “the best overall effect out of available sorties.”⁹³ In Bufton’s opinion his aim should surely have been to “get the best effect on oil.”⁹⁴

Bufton admitted that non-oil targets might at times offer better prospects for success, but he considered it essential to strike a balance. Where that balance was struck depended upon where Harris placed oil in his order of priority. Area

attacks on German cities, as discussed in Harris's letter of 1 November, appeared, Bufton claimed, to hold a "magnetic attraction"⁹⁵ for the bomber leader. It was this attraction, argued Bufton, that may have been more influential in Harris's target selection than the weather and tactical difficulties that he had offered as excuses. The techniques for bombing oil required development, was Bufton's argument, but he did not believe that development would be achieved by concentrating on area targets.

As far as the figures for German oil production were concerned, Bufton was only able to say that no pains had been spared in order to make them as accurate as was humanly possible. Many agencies, he confirmed, had contributed. Bufton totally rejected the suggestion made by Harris that there might well have been more oil attacks than were necessary. In my opinion, he attested, "our attacks at present are less frequent than necessary to fulfil the required purpose."⁹⁶

Bufton also rejected the claim made by Harris that Gelsenkirchen was a difficult target to locate. Crew reports following the daylight attack on 6 November indicated that it had been successful. Additionally, there were no valid reasons why Oboe attacks on Gelsenkirchen should be any less successful than those on Essen or Dortmund. Bufton also contradicted Harris's claim that photographs of the oil facilities at Gelsenkirchen, taken on 28 October, showed no signs of industrial activity. On the contrary, Bufton continued,

Assessment of cover taken on 28th October showed resumption of production to be imminent at Nordstern. At Scholven repairs had been making rapid progress and the plant was expected to start up in one or two weeks.⁹⁷

An attempt was also made by Bufton to clear up the doubts that Harris entertained as to the main aim of the attacks on oil. Harris had asked whether the bombers were to obliterate the targets or simply stop production. Production, Bufton believed, had to be kept at the lowest practicable level. During the summer it had been possible to obtain photographic intelligence and carry out attacks virtually at will. Output was thus limited by comparatively small attacks against a wide range of targets. These attacks forced the Germans to improve their repair organisation and this had enabled the facilities to return quickly to production. If attacks continued at the same weight, then, in order to keep production down, it

was essential that they be made more frequently. With winter weather providing worse flying conditions, photographic evidence was not always readily available to determine when particular targets required attention. Neither waiting for photographic evidence, nor missing the opportunity for an attack, was acceptable, Bufton affirmed. "We should aim 'at complete destruction' with the hope of preventing production for two to three months."⁹⁸

Bufton then drafted a reply to Harris for Portal's consideration.⁹⁹ Indicative of the understanding that had been reached between Portal and Bufton is the fact that the draft was accepted by Portal with only the most minor of alterations. When it is appreciated that the letter was over four pages in length the degree of commonality between them is remarkable. Portal made no changes of fact, opinion, or suggestions, in his reply. Only in seven places did he see fit to alter Bufton's wording and even then the alterations were purely cosmetic. He did, however, add one extra sentence, not drafted by Bufton, a placatory message: "With best wishes for your continued success."¹⁰⁰

The Portal/Bufton response to Harris was dated 12 November 1944. Portal made clear that he accepted the enormous difficulties that Harris faced in determining the target to be attacked, and confirmed that the final decision rested with Harris. Portal, however, was at pains to point out that he felt it to be his concern, and his duty, to ensure that Bomber Command lost no opportunity for attacking priority targets specified in the current Directive. He sought Harris's assurance that the apparent magnetic attraction of German cities was not deflecting him from the designated priority targets.

Portal rejected the claim made by Harris that extended operations in the Ruhr would result in enormous increases in Bomber Command's loss rates. He used Bufton's figures. With Allied forces now established on the Continent, it meant that much of the extensive early warning systems that Germany had possessed had been lost. Now, enjoined Portal, is the time to strike at oil facilities in the Ruhr,

before the enemy can resolve his early warning difficulties. It will be time enough to change when heavy casualties do in fact materialise. We should if we can secure the maximum impact on the Ruhr itself, and the quickest direct and indirect effect upon the Ruhr oil.¹⁰¹

On the following day, 13 November 1944, Bottomley also wrote to Harris. His letter covered very similar ground to Portal's letter and called for the winter bombing programme against oil targets to be stepped up. Attacks were to be repeated against oil targets as the opportunity offered, regardless of whether or not the degree of damage from an earlier raid had been assessed. Bottomley extended the range of oil targets to be considered because he introduced Leuna, Pölitz, and the refineries at Harburg, into the bombing equation.¹⁰²

Concern was also expressed in November by the Joint Intelligence Sub-Committee responsible for oil, at the lack of photographic evidence of actual damage created at the oil targets attacked. Too many unknown factors were having to be used in their calculations. Despite this, their summation was that the operations of the German Army and the *Luftwaffe* were both being limited by oil shortages. Although this assessment was extremely satisfactory, the paper continued, the current crisis in German oil supplies was entirely due to the bombing successes gained in the summer and early autumn. They estimated that by September 1944 German oil supplies had fallen to 23.5 per cent of the pre-attack level. They expected that production would have been stepped up during October and November but were hoping that recent blind bombing had gained some successes. The success of the attacks on enemy oil as a decisive war operation, they insisted, still hung in the balance. They also sounded a warning: "Nothing less than the maximum possible effort of the Allied bomber forces is likely to prove adequate to the task in the difficult conditions of winter."¹⁰³

For once, Harris made no immediate response to either the Portal or the Joint Intelligence Sub-Committee communications. When he finally replied, on 24 November 1944, rather than provide explanations, he went off at a tangent. His opening paragraph related to the strength and disposition of the German night fighter forces. Careful attention to tactics and radio counter measures, he claimed, had been the only means by which losses had been kept within bearable limits. Harris then came to the nub of the matter. Losses could only be kept within sustainable limits, he believed, provided Bomber Command was not required to concentrate on one particular area of Germany or on "a narrow range of specialised targets."¹⁰⁴

According to Harris, an acceptable casualty rate would be of the order of three to four per cent. Within that range, during 1942 and 1943, aircrew had a twenty-five per cent chance of surviving their first operational tour but only an infinitesimal chance of completing a second. During these years Bomber Command was the only military arm able to strike directly at Germany and therefore losses had to be endured. It was Harris's argument, in late 1944, that it was unreasonable to expect crews to continue to face such daunting odds, odds that were higher than other Commands within the Royal Air Force, and higher than those faced by the other Services.¹⁰⁵

Harris also argued that the Directive under which he was operating was too restrictive. He made a special plea to be allowed to retain a certain freedom of action. To keep German fighter controllers in doubt required that two or three different targets had to be identified as being at risk. If only one area or one target was the focus, heavy losses could be anticipated. He then made the astounding claim that

human nature being what it is, crews get bored by continually attacking one area and it is hard to maintain that extra bit of keenness and enthusiasm which may make the difference between a mediocre and a first-class attack.¹⁰⁶

With unseen and violent death a constant companion during every moment while over Germany, it is hard to imagine any bomber crew member ever becoming bored.

Although no written evidence has been located to confirm that Bufton was asked to comment on this letter from Harris, the fact that he prepared the draft response is sufficient to show that he remained totally involved. His draft was just over four pages long, and once again the changes made by Portal were minimal, and purely verbal. The import of the Bufton/Portal response was that concentration of the bombing attack was essential and in the short term the targets were oil and communications. Harris was reminded that the German loss of their early warning system together with the electronic counter measures supplied by No 100 Group, should mean that bomber losses remained within sustainable limits. Portal added a hand-written end comment to Bufton's draft: "Agree as slightly amended."¹⁰⁷

Portal's virtual total acceptance of Bufton's draft confirms that, at least by late 1944, both had adopted pragmatic attitudes with regard to possible casualties. Bufton's draft noted Harris's expressed concern at the possibility of loss rates rising to the levels experienced in the 1942-1943 period, but his response was unequivocal. Acceptable loss rates, at any time, he argued, must

depend upon the general situation existing at that time. If we assume that the war is likely to continue only for another few months, and if, by concentrating our effort where it hurts the enemy most at relatively high cost rather than attacking important targets at lower cost, we can help to shorten it, then I think we should if necessary be prepared to sustain a loss rate of 3% to 4%. We could not I think turn aside from an opportunity merely on the grounds that it might involve casualties higher than those normally accepted by other Commands. . . . our readiness to accept casualties must be determined only by the value of the strategic prize to be gained.¹⁰⁸

Harris's response, slightly sarcastic in tone, was dated 12 December 1944. He advised Portal that his Operational Research Section (ORS) had concluded their own feasibility study of the oil plan, and had calculated the effort required to satisfactorily complete the task in Western Europe. He reminded Portal of their accuracy on previous occasions. They had pointed out, he insisted, "that it would take three times the effort estimated by the 'expert', Mr Solly Zuckerman, to knock out the French marshalling yards and that was precisely what happened."¹⁰⁹ My ORS, continued Harris, has estimated that it will require approximately 9,000 sorties per month to knock out the forty-two synthetic oil and benzol plants, crude refineries, and finishing plants in the west of Germany. Weather was the primary limiting factor and, because many of the plants were small, there was little prospect of success should cloud exceed more than three tenths' cover. Only Oboe or formation GH attacks on short range targets, offered any chance of success.

Very detailed weather records had been maintained by Bomber Command over the preceding five years, Harris observed, and they showed that during December, January and February, there would be, on average, only eight days and eight nights each month when clear conditions could be expected. Of these, only just over six would be correctly forecast. There was also the problem of

moon conditions. Approximately one quarter of the clear nights would be unsuitable for deep penetrations because the moon would be close to full, and the bombers would become easy prey to German night fighters. Another problem with weather was that, although conditions over Germany may have been suitable, forecasts for the home bases may have caused operations to be cancelled. In these circumstances it was reluctantly accepted that there would only be three or four nights each winter month when the possibility existed for a successful attack of an oil target in central Germany. With regard to day attacks, it was believed that they could possibly be made on about six or seven days each month.

According to Harris, the conclusion reached by his staff was that under these conditions the twenty-seven oil targets in Western Germany could receive a sufficient weight of attack to keep them out of commission, but would require at least 2,600 sorties each month. Those targets located in central Germany were a more difficult proposition. To keep them out of commission would require the assistance of the Eighth Air Force.

It was the final paragraph of this letter that particularly caught Portal's attention. The MEW had become Harris's target. They always overstated their case, protested Harris, and no sooner have the identified targets been attacked than

more and more sources of supply or other factors unpredicted by MEW have become revealed. The oil plan has already displayed similar symptoms. The benzol plants were an afterthought. I am quite certain that there are dozens more benzol plants of which we are unaware and when and if we knock them all out I am equally certain we shall eventually be told by MEW that German M.T. is continuing to run sufficiently for their purpose on producer gas, steam, industrial alcohol, etc., etc. However we should be content if we can deprive them of adequate supplies of aviation fuel. That in itself will take enough doing.¹¹⁰

Once again this letter was referred to Bufton for comment. His response covered nine and a half pages. His first comment was that he believed that Harris, in his closing paragraph just quoted, was attempting to suggest that Bomber Command's attacks on oil targets beyond the Ruhr should be limited to Leuna and Pölitze. If that was the case, Bufton argued, then Harris was clearly endeavouring "to throw doubt . . . upon the soundness of the oil plan."¹¹¹

Buften then proceeded to examine the letter almost sentence by sentence. The ORS figures, the effort required by Bomber Command, and the problems of weather, he noted, should be accepted without question. He reminded Portal that it had never been the intention that Bomber Command should attempt to carry out the oil plan unaided. Tactically, and in the effort required, it was beyond their present capability. The Eighth Air Force had already made a major contribution to the oil programme, and it was expected that their assistance would continue. That being the case, the figures provided by Harris were largely irrelevant.¹¹²

Buften also pointed out that the major proportion of German oil production came from a limited number of plants. The eleven synthetic plants in central Germany provided seventy per cent of Germany's motor and aviation fuel. Their immobilisation would be a major contribution towards bringing an early end to the war in Europe. Buften also expressed his disappointment that Harris appeared to be trying to restrict Bomber Command's targets beyond the Ruhr to only Leuna and Pölitz. While they each produced 50,000 tons per month, another synthetic plant at Brück, in the Sudetenland, produced 56,000 tons per month. If Leuna and Pölitz could be immobilised, then Buften believed Bomber Command should direct its attention to Brück – a difficult target, he admitted, for the American Fifteenth Air Force.

It was the final paragraph of Harris's letter that gave Buften, as it had Portal, most cause for concern. This, he acknowledged, was simply a continuation of the on-going argument that Harris continually raised claiming priority for his area bombing programme, rather than the selective attack policy determined by the Air Staff. The fact that earlier selective target system attacks had not always been successful, Buften complained, was not because of the

inaccuracy of the original appreciation, but in the failure of the bomber forces to complete the effective attack of the system concerned within the time period necessary to outpace the efforts of enemy industry to provide alternative capacities.¹¹³

To reach a decisive position in the case of oil, Buften continued, required all the major producers in the Ruhr, Central and Eastern Germany to be simultaneously put out of action. From the very beginning it was essential that attacks were delivered in rapid succession, and thus prevent the development of German

countermeasures. If Harris lacked either enthusiasm, or remained unconvinced of the importance of the task, Bufton asserted, the oil plan would fail. He then turned his attention to the particular examples quoted by Harris as panaceas.

Bufton denied the claim made by Harris that benzol plants had been added to the target list as an afterthought. Their non-inclusion in the early days of the oil offensive, Bufton pointed out, was due simply to the fact that they were considered less significant producers than synthetic plants and refineries. Had attacks on these latter facilities failed, then the oil plan as a whole would have had to be reconsidered. In those circumstances, the question of benzol plants would not have arisen. Bufton admitted that there were more benzol plants in existence than were listed in the current target lists, but claimed that those that had been named were considered the largest and therefore provided the best targets.

Once again the long draft prepared by Bufton was accepted by Portal and sent to Harris with only minor changes of phraseology, and one additional paragraph. The addition by Portal was to express his delight that bomber losses at Leuna and Pölitz, contrary to Harris's forebodings, at least in the first attacks, had been minimal. "I fully realise" he continued,

that we may not escape so lightly next time (and this makes one regret that, probably for good operational reasons, the attack on Pölitz was so relatively weak) but I am convinced that these two targets with Brux, are of such overriding importance that losses up to 5 or even 10% in successful attacks would be well worth while.¹¹⁴

This Portal/Bufton response first took issue with Harris over his apparent assumption that the oil offensive was the sole responsibility of Bomber Command. By basing both his assumptions and arguments of the effort required in such circumstances, Harris was told that he had provided a totally false picture. The oil targets in central Germany were not solely the responsibility of Bomber Command and, therefore, the calculations made by Harris as to the force required for their destruction were totally misleading. Harris was reminded that the Eighth Air Force would continue to attack oil targets, particularly those in central Germany, at every available opportunity.

Portal then expressed his pleasure at Harris's claim that Bomber Command would be able to deal with the twenty-seven oil targets in West Germany by

employing only 2,600 sorties a month. This, he noted, was less than seventeen per cent of the average number of bombing sorties each month over the preceding six months. As such, it seemed a remarkably small expenditure for a potentially very good return, if it meant the virtual destruction of a primary target system.

A further attempt was then made by Portal to convince Harris of the vital importance of the oil offensive. The primary task facing the allied strategic bomber forces was, he confirmed, “to put out and keep out of action the 11 synthetic plants in Central Germany.”¹¹⁵ Their production, Harris was reminded, provided seventy per cent of the total German requirements for aviation and motor fuels. It could mean an early end to the war. No opportunity over the winter months was to be missed. If the job could be completed over winter, Portal attested,

strategic bombing will go down to history as a decisive factor in winning this war. On the other hand, if by any weakening of determination or any reluctance to implement the policy which we have laid down our grip on the oil position is relaxed, the vast effort we have expended against oil will have been largely fruitless We must therefore press on with our oil policy, not only because we hope to gain immense advantage by it, but because we can ill afford now to discard the insurance in all fields which its continuation represents.¹¹⁶

Portal then proceeded to express his extreme disappointment that Harris continued to regard the oil plan as yet another panacea. While that situation pertained, Portal argued, “you will be unable to put your heart into the attack of oil.”¹¹⁷ It appeared to Portal that both Leuna and Pölitz had been only reluctantly accepted by Harris as targets, and that he was unwilling to consider further oil targets in Central Germany. Portal affirmed that he had been hoping that Harris would have been eager to accept any opportunity to attack refineries in Central Germany because that would have confirmed Bomber Command’s participation in probably the most profitable bombing policy of the war. He cited the refinery at Brück as an additional target to be considered.

Criticism of Harris continued in Portal’s next paragraph. Harris, he declared, by his expressed doubts on estimates provided by MEW, implied that he had no faith in any bombing programme that called for attacks against a particular target system. To be successful, such attacks had to be concentrated in time, and

wide ranging. Destroying half the factories concerned in any particular target complex did not mean that the campaign had been successful. "If we had tried harder in our attacks on ball-bearings" Portal added, "I have little doubt that the full effects forecast by the M.E.W. would have been achieved."¹¹⁸

Perhaps to soften the criticism, Portal then observed that he was pleased that Harris had shown a greater press-on spirit with the attacks on oil targets. But he also issued a warning. Harris was told that if he allowed his

obvious doubts . . . to influence . . . conduct of operations I very much fear that the prize may yet slip through our fingers. Moreover, it is difficult for me to feel that your staff can be devoting its maximum thought and energies to the accomplishments of your first priority task if you yourself are not wholeheartedly in support of it.¹¹⁹

In closing what Portal admitted had been a very frank letter, he reminded Harris that because Bomber Command had achieved so much in the oil campaign,

it would be a tragedy if, through any lack of faith or understanding on your part, the R.A.F. Bomber Command failed to take the greatest possible share in the supreme task of driving home our attacks on enemy oil.¹²⁰

Despite the pressures being applied to Harris by Portal, along the lines defined by Bufton, the Director of Bomber Operations was clearly not fully satisfied that all was being done that should be done in the offensive against German oil targets. This was confirmed, late in December, by a note Bufton addressed to the Assistant Chief of the Air Staff (Operations), Air Vice-Marshal Williams, who had replaced Coryton in August 1944. Bufton suggested that a possible reason for the apparent loss of interest in the oil campaign was the pressure being applied from Eisenhower's Headquarters for an increased effort to be made against German communications. According to Bufton the bombing offensive was at a critical phase. The balance of power of the offensive capability of Bomber Command against the defensive qualities of the *Luftwaffe* fighter force was delicately poised. Although the German fighter force numbered 2,000 aircraft, the number able to be deployed at any particular time was limited by the shortage of oil. However, he continued, by spring there could be "2,500 fighters which may well play a fully

active part in opposing our operations if the oil campaign is not pushed home with unfaltering determination."¹²¹

Buften included an *addendum* in his note to Williams, emphasising the importance of Pölitz as a target, and criticising the fact that the previous night a force of only 207 Lancasters and one Mosquito had been sent to such a vital target. Harris himself had claimed, in his letter of 12 December 1944, that 350 aircraft would be required for the night attack of oil targets. "It is now nearly two months" Buften observed,

since Bomber Command was asked to give special consideration to the attack of Leuna and Pölitz. This period has, we believe, been used to considerable advantage by the enemy as far as Politz is concerned. It would have improved our position considerably if it had been attacked earlier.¹²²

Two days later Buften addressed another note to Bottomley and Williams on the same subject. He provided several reasons for what he viewed as a falling off of interest in the oil offensive. Heading the list was Harris's letter of 12 December expressing doubts as to the soundness of the oil policy. The *Evening Standard* of 21 December had also raised the same point. Next, the Americans had produced a plan called *Clarion* that aimed at disrupting German communications and morale by a widespread bombing campaign. If it was accepted, Buften warned, it would be at the expense of the oil offensive. There had also been a number of demands from SHAEF for communication attacks in the Leipzig area to be increased. The same source was also applying pressure for an over-riding priority to be accorded to direct support operations. Frequently, he noted, they related to some form of communications. Finally, Buften claimed that in the view of the CSTC, the Weekly Intelligence Summaries issued by SHAEF were misleading. They tended to concentrate on the favourable effects produced by attacks on railways in particular, but ignored those that had been less successful. In conclusion, Buften declared:

I am afraid that while oil may nominally remain first priority it may in fact take second or third priority as a result of the Deputy Supreme Commander's enthusiasm for communications, his now close association with General Spaatz, who I believe has always been inclined to favour a communications policy, the power which the

Deputy Supreme Commander has of diverting the effort to direct support on an over-riding priority when he considers this to be necessary, and finally a tendency which has already shown itself, to attempt to combat the G.A.F. by attacks on airfields rather than by limiting its supplies of fuel (fighter production is probably now invulnerable to systematic attack).¹²³

The next barrage in the war of words, four packed pages, was delivered by Harris just after Christmas. His tone was increasingly belligerent. As had become normal in the oil controversy, Bufton was given this letter, and his comments requested. He annotated Harris's letter at length. Next, he prepared a comprehensive memorandum for Portal covering both the main arguments and some isolated points raised by Harris that Bufton considered required a response.

Despite Harris's claim that he was pursuing the oil plan to the best of his ability, it was Bufton's belief that he was a non-believer in its efficacy. This fact was borne out clearly in this latest letter from Harris. "I am afraid" Harris affirmed, "that nothing will disillusion me of the view that the oil plan is . . . another panacea."¹²⁴ A later comment was that although he was doing his "utmost to push this plan to the conclusion sought . . . the basis of the plan is wrong in light of all the factors involved, and its pursuance is, and will prove to be, chimerical."¹²⁵ In another paragraph he admitted that he did "not believe we shall achieve our object in the oil plan."¹²⁶

Notwithstanding his expressed opposition to the oil plan, Harris attempted to convince Portal that he was wrong to suggest that because he held this view, he would be unable to concentrate on the oil offensive programme. Harris admitted that he left no stone unturned to put his contrary views across, but claimed that once the decision was made he "carried it out to the utmost and to the best of my ability."¹²⁷ Harris expressed regret that Portal should have doubted him, but then reminded the CAS that he would be surprised if he had any examples to support his case. Harris argued that he "could certainly quote precedents in the opposite sense."¹²⁸ A riposte, available to but unused by Portal, would have been to remind Harris of first, his procrastination over the Path Finder Force, and later, its partial emasculation in April 1944, at a time when the force should have been expanding.

In a later paragraph, Harris acknowledged that he regretted that Portal believed the Bomber Command staff were not devoting their maximum thought and energy to the oil plan because of the views held by their Commander-in-Chief.

"I do not give my staff views" thundered Harris. "I give them orders. They do and have always done exactly what I tell them."¹²⁹ In a hand-written comment beside this paragraph Bufton noted: "This is rot. Of course they must know his views. Surely he does not pretend to run the whole bomber offensive single-handed!"¹³⁰

Bufton in this instance was correct in assuming that Harris's staff well knew his views but he was wrong to believe that they were significantly involved in running the war. Harris ran the Bomber Command Headquarters' side of the war very much single-handed and his staff were alert to the fact that attempts to interfere would produce dire consequences. To retain a position in Bomber Command headquarters very clearly demanded that one toe the party line.¹³¹

In his twelve page report to Portal, Bufton was slightly more diplomatic than his hand written comments had been. He did admit that Bomber Command had done well in some of the attacks that had been carried out. But these results, Bufton argued, may have been sufficient to convince Harris that he was doing his utmost to pursue the oil offensive. However, knowing Harris's views, Bufton was unable to accept that Harris could ever appear enthusiastic about the offensive, and his attitudes would have been readily identified by his staff. Motivation was never enough if it was purely a matter of obedience to orders, Bufton observed. He concluded, total satisfaction regarding the oil offensive will only be achieved when we are completely satisfied that "the C-in-C and his staff are united in enthusiasm for it."¹³²

The MEW had also come in for very strong criticism in Harris's letter. He had written that he had "no faith in the M.E.W. because of their past record (their amateurish ignorance, irresponsibility and mendacity)."¹³³ These accusations were partially deflected by Bufton, who pointed out the apparent confusion in Harris's mind over the part played by the Ministry in the matter of target selection and bombing policy. They had been involved in the calls for attacks of the ball bearing industry but were not the final arbiters. As far as oil was concerned, the oil industry itself continually insisted on the benefits to be gained from attacks on oil facilities. Bufton detailed the various authorities that had been involved over the years, and the wide-ranging advice received before the importance of oil as a target was fully accepted.

The main thrust of this letter from Harris to Portal concerned the on-going argument relating to the validity of the oil target policy, its practicability, and

Harris's determination that area attack was the only war-winning policy. With regard to the first point, Bufton claimed that the soundness of the policy was confirmed by the German reactions to the bombing campaign supported by an unceasing flow of confirmatory intelligence. Defences had also been vastly increased, and specialised repair teams had been made immediately available to attempt to rectify damage in order that some production would be achieved before the plants were again attacked.

With regard to area attacks, Harris had asserted in another letter that

All Germany openly bemoans it as their worst trial. We know that on more than one occasion they have nearly collapsed under it. As the programme nears completion we chuck it all up – for a panacea.¹³⁴

Bufton agreed that area attacks had been of some value. Morale had been weakened, and additional strains had been placed on the German work force. However, the effects were long term, and with Hamburg as an example, even in the most heavily hit cities, recovery was still possible. In Hamburg's case, production was largely restored to its previous level within about four months of the fire storms of July 1943. Bufton, in a hand-written comment on Harris's letter, noted that the first two sentences quoted above, were pronouncements that originated from the MEW. Harris, despite his antagonism to that organisation, readily accepted them because they favoured his own policy.

The Portal response to Harris, yet again in words largely provided by Bufton, was extremely blunt. The intent was to convince Harris of the soundness of the oil plan. Despite Harris's assertions to the contrary, Portal maintained that he believed that the oil attacks would have been pressed home "more certainly if they were backed not solely by your loyalty but by your sense of enthusiasm as well."¹³⁵ Harris was then taken to task for his interpretation of the part played by the MEW in target determination. He was advised that any proposal that could involve a change in bombing policy was rigorously examined by the Royal Air Force and American Air and Intelligence staffs as well as British and American technical experts. Harris was also informed that his savage berating of the MEW "was an unworthy and inexcusable travesty of our conduct of the war to suggest that our policy is determined on that basis."¹³⁶

Portal did concede that area bombing over an extended period, provided it was of sufficient weight, might conceivably have forced German capitulation. It was Portal's belief, however, that German counter measures would have prevented area bombing from being carried out to any decisive conclusion. In order to maintain the offensive, Portal stressed, it was essential to adopt precision attack methods and oil, in this situation, provided the most worthwhile target system. This eight page letter from Portal concluded with an exhortation:

The energy, resources and determination displayed by the enemy in his efforts to maintain his oil production must be more than matched by your determination to destroy it: and your determination matters more than that of all of us put together!¹³⁷

Between Harris's letter of 28 December 1944 and the Bufton-inspired response by Portal on 8 January 1945, there was a further letter from Harris on 29 December 1944. The first part of this letter related to the question of the oil target at Br  x. Harris had agreed that he regarded it as a feasible proposition and was adding it to his list of oil targets. He pointed out that because it had been bombed twice in December, it would be placed last on the list of nine major oil plants on the priority list.

The second part of Harris's letter concerned discussions that he had had with Bottomley concerning requests from Eisenhower's Headquarters for attacks on transportation targets. These, Harris pointed out, had been requested by SHAEF as cover for urgent Army support: few of which had anything to do with the Army situation. They are, he complained, "a poorly disguised prosecution of the Zuckerman transport plan."¹³⁸ The frequency with which such calls are being made, Harris continued, means that that day's work has to be centred on them. SHAEF, he concluded,

are inclined to look around for things for us to do, rather than, as they should do, call upon us only in the last resort to do essential attacks which they cannot do within their own resources. I think that you should take this matter up with Tedder, and impress upon SHAEF that we are not looking for work.¹³⁹

Portal's response to this letter was again an almost exact copy of the draft supplied by Bufton.¹⁴⁰ Changes made were again only of the most minor order;

they were restricted to sentence construction and not to matters of either fact or suggestion. Portal expressed his pleasure that Br  x had been added to the target list, and agreed that the requests for attacks on transportation targets mentioned by Harris were a matter of concern. Bottomley, Portal explained, had already discussed the matter with Tedder, and had been assured that all requested transportation attacks had been essential for the support of critical land operations. Portal acknowledged that it was a matter that required close and constant attention.

Early in January 1945 the Joint Intelligence Committee produced a further analysis of the effects of Allied attacks on the enemy oil situation. The Combined Chiefs of Staff had taken note and were agreed that the aim should now be “not merely at reducing production to the September level . . . but at reducing it to a very much lower figure by keeping out of action simultaneously all major producers . . . in January.”¹⁴¹ The Combined Chiefs of Staff identified it as a task well within the capacity of the Allied bomber forces but they added a proviso. The job had to be undertaken with the “energy and enthusiasm displayed by the enemy in repairing his plants.”¹⁴²

On 15 January 1945 Directive No. 3 was issued to the Strategic Air Forces in Europe. The petroleum industry remained as first priority followed by the German lines of communication and then tank factories. Harris was provided for because the Directive also noted that if weather conditions prevented attacks on the priority targets, blind bombing techniques could be employed against important industrial areas. German jet aircraft had also become of concern. Although they had not been included in the priority list, the *Luftwaffe* and “primarily its jet production, training and operational establishments, now become primary objectives for attack.”¹⁴³ In addition, direct army support, the enemy U-boat organisation, and Special Operations Executive tasks, all remained as targets.

Portal waited ten days for Harris to reply to his letter of 8 January 1945. When it finally arrived it could not have been received with any degree of enthusiasm by anyone in the Air Staff. Harris had closed his previous letter reminding Portal that he felt very strongly about his position in the bomber war and the protracted arguments relating to area versus precision attacks. On this latest occasion Harris boiled over. He offered his resignation.

Firstly, he attacked Portal for having suggested that he had failed to discuss matters of policy with his staff and was attempting to run the bomber war single handed. On matters of policy, Harris reiterated that his staff received orders. They were not invited to discuss such affairs. Tactical matters were handled differently. According to Harris, frequent discussions took place, opinions were invited, and there was a wide exchange of views. He expressed surprise at Portal's criticism because he had noted no inclination on Portal's part,

or anywhere else in the Air Ministry for that matter, to discuss with me, or even to consult me beforehand upon such matters as the strategic policy applicable to my force, or to take me into confidence or consultation thereafter.¹⁴⁴

Next in his letter, Harris attacked Portal for having abandoned regular Commanders-in-Chief meetings. He claimed it was not his fault that they were not in more regular contact. He pointed out that when Bomber Command was placed under Eisenhower he had made daily visits to Eisenhower's Headquarters to obtain situation reports. After SHAEF moved to France the visits, weather permitting, continued on at least a weekly basis.

Harris then resumed his attack on policies that had called for Bomber Command to be diverted to targets that he regarded as panaceas. The term, he professed, was not used contemptuously, but was rather the only fully descriptive one available. Ball bearings, molybdenum, locomotives, and the Möhne and Eder Dams were all campaigns and attacks that achieved nothing. In the case of the dams raid, it provided only an unequalled display of gallantry and skill both in flying and technical ingenuity, but it incurred insupportable losses. Strategic targets falling within the category Harris labelled as panaceas, were those where it was believed vital bottlenecks had been identified. If success was to be obtained on these targets, their destruction had to be swift and complete. With regard to German fuel requirements, Harris argued, they required very little

for the essentials with which to continue the fight defensively. It is those last essentials which I know will be so extremely difficult to find, deprive her of, and to keep her deprived of. It is no good knocking out 75% of something if 25% suffices for essentials.¹⁴⁵

The problem with oil targets, Harris added, was that new ones were appearing on bombing lists faster than old ones were being destroyed. The danger arises, he warned, should we abandon area attack, which has created vast destruction “in favour of a type of attack which if it fails to achieve its object achieves nothing. Nothing whatever.”¹⁴⁶

Harris was by now vigorously riding his favourite hobby horse. He warmed to the task. The oil plan pursued in 1940, he reminded Portal, was

grotesquely unrelatable to facts or to practical possibilities. As to this second edition, it is another attempt to seek a quick, clever, easy and cheap way out. It will prove to be none of these things . . . We pursue a chimera and we will not overtake it. The oil policy will not succeed. If it fails, the enormous force diverted will achieve virtually nothing. It is for such reasons that I am glad to have no share of responsibility for a decision which I am convinced is utterly wrong. Those are my views on oil.¹⁴⁷

Had Harris been aware of the communication sent by Speer to Hitler on 19 January 1945 then perhaps his antipathy toward the oil plan would have been radically revised. This communication, fifth in a series on the critical German oil position, confirmed the significant and lasting effects that had been created by air attacks on the hydrogenation plants and oil refineries. Speer pointed out that only by exhausting the small oil reserves had it been possible to marginally increase supplies to the *Wehrmacht* during the period October to November 1944. Further attacks in January added to the problems. Repairs had been made more difficult by the destruction of machinery and technical equipment already in short supply. Speer identified night bombing as having been more effective than the day raids because of greater accuracy and the use of heavier bombs. His summation was that even if, during the first quarter of 1945, there were no further attacks on either the repair work or the plants themselves, oil production would not reach the theoretical figures forecast in the final quarter of 1944.¹⁴⁸

Unfortunately Harris was not privy to Speer's correspondence. He closed his letter to Portal on a bitter note. The latter, he bemoaned, had intimated that he, Harris, had been disloyal and had failed to carry out the laid down policies. This suggestion was flatly rejected. He admitted that although he had no faith in some of the policies, and had voiced his opposition, once decided, he provided

every worth while effort no matter how impracticable he considered the plan to have been. The situation had become one of

heads I lose tails you win, and it is an intolerable situation. I therefore ask you to consider whether it is best for the prosecution of the war and the success of our arms, which alone matters, that I should remain in this situation. ¹⁴⁹

No evidence has been found among the Bufton Papers to indicate that he was asked to comment on this latest letter from Harris, but the fact that he had been intimately involved in the earlier correspondence would make it unusual if he had been excluded. Portal's reply was dated 20 January 1945.¹⁵⁰ He expressed his regret that he had failed to convince Harris of the soundness of the oil plan. The Germans were short of oil, he added, and current production forecasts fell short of the estimated requirements for even a static defence. Furthermore, the Russian advances in south-eastern Europe indicated that there could well be difficulties with further supplies from that area. In spite of the fact that only thirteen per cent of Bomber Command's effort had been directed against oil targets during the last four months of 1944, Portal admitted that he was well pleased with the results.

With regard to Harris's claim to have been ignored in policy discussions, Portal acknowledged that he was prepared to accept a more senior representative from Bomber Command at the meetings, if that was what Harris required. What he was not prepared to accept, Portal observed, was any objection raised by Harris relating to the selection of officers for duties in the Air Ministry. Although neither Bottomley nor Bufton had been specifically criticised, Portal was at pains to express his satisfaction as to their devotion to both the interests and successes of Bomber Command. Portal called for any suggestion that Harris may have in order that a greater degree of co-operation could be achieved between the Air Ministry and Bomber Command.

A propos panaceas Portal virtually admitted defeat, conceding that the argument was not worth pursuing further and that they must agree to differ. Both had reached entrenched positions. Portal recognised the value of area attacks, but noted that for them to be decisive required a more vastly expanded bomber force than would be available in the foreseeable future. On the other hand, oil

provided a target system which, if successfully attacked, could mean an early and successful conclusion to the war. In Portal's opinion, Harris regarded the oil plan as having failed because, despite the efforts of his Command, the war still continued. This, Portal made clear, was a false assumption. The oil plan succeeded as soon as German resistance to an Allied offensive on either the Eastern or Western Fronts was affected by oil problems. Despite this guarded call for at least a slight expansion of the effort directed against oil, Portal ended this paragraph by expressing the hope that there would be enough punch remaining in Bomber Command to flatten some of the German cities named by Harris in his letter. One of those named cities had been Dresden.

In his conclusion, Portal expressed his regret that Harris had felt that he was being accused of disloyalty. Portal assured him that he was mistaken. His loyalty was taken for granted. To question either Harris's memory, or his interpretation of facts, was not to imply disloyalty. Portal closed this letter:

I willingly accept your assurance that you will continue to do your utmost to ensure the successful execution of the policy laid down. I am very sorry that you do not believe in it but it is no use my craving for what is evidently unattainable. We must wait until after the end of the war before we can know for certain who was right and I sincerely hope that until then you will continue in command of the force which has done so much towards defeating the enemy and has brought such credit and renown to yourself and to the Air Force.¹⁵¹

The reply made by Harris on 24 January 1945, other than admit that he had totally misunderstood Portal's meaning, and that Bomber Command would do its utmost to implement the policy determined, did very little to resolve an unsatisfactory situation. It did mean, however, that Portal was not forced to seek a replacement for Harris as AOC Bomber Command. Such a disruption, at this stage of the war, could have had several unpleasant repercussions, one of which might have been a drop in the morale of bomber crews. Notwithstanding possible problems, it was a step that should have been taken. Harris's removal could have been engineered so that it would not have been seen as either a demotion or punishment. His retention left the Royal Air Force in a somewhat invidious situation. The man supposed to implement the policy determined by the Air Staff, Harris, had largely ignored Portal's oil plan yet retained his position. His power,

apparently, had been increased because it now seemed that he was invulnerable to external pressures. Correspondingly, Portal's position was weakened. He had given the impression that disobedience at the highest levels would be overlooked, at least until the end of the war.

Harris's response to Portal pursued similar lines to those he had been following in earlier correspondence. Bombing policy was one example. While his own input was either ignored or given too little weight, he considered that policy, on too many occasions, appeared to have been decided by either junior officers or by civilian committees. Harris admitted that he was not entitled to determine policy, but claimed that when alternatives were only under consideration, his voice should have been heard. He knew the limitations of his Command, and he believed that he could have advised on which policy seemed to offer the best returns.

Harris's next focus was on the question of the selection of staff officers to work in the Air Ministry. He readily admitted that it was a matter outside his own jurisdiction. His prime concern, he insisted, was the establishment and maintenance of good relations between his Command and the vital department of the Directorate of Bomber Operations. Bufton was his immediate target. Harris lamented that, despite all his efforts, he had found it impossible to get things on a proper footing. He admitted it was Portal's decision whether or not Bufton remained, but he wanted Portal to appreciate that if Bufton stayed difficulties would persist. As far as Harris was concerned, Bufton

appears to ignore what is a major and essential part of his job, namely, to press forward the interests, urgent requirements and doctrines of Bomber Command . . . while spending much of his time trying to run my Command . . . he makes no serious attempt to consult or agree with me or my staff. It may be just a matter of personalities. But it does not work, and is therefore deplorable and a great handicap.¹⁵²

Bottomley, asserted Harris, was a different matter. His name should not be coupled with that of Bufton. "I have the greatest personal regard and admiration for Bottomley" Harris continued, "who is always most helpful. Where Bomber Command's interests and affairs are concerned I should be sorry indeed to see him leave his present appointment."¹⁵³

Harris himself, however, gives the lie to this last statement in his *Bomber Offensive*. There he describes the appointment of Bottomley as DCAS as unfortunate. Bottomley was junior to Harris in the Service (as Harris had reminded Portal in his letter of 18 January), and,

as a staff officer could not constitutionally exercise control of a force in the field or issue order [sic] direct to a Commander in the field. This was got over, after a fashion, by evolving a formula; orders given to me were supposed to come from Portal through the D.C.A.S. who was thus only acting as Portal's staff officer. . . the natural result was a multiplicity of directives embodying one change of plan after another and so cautiously worded at the end with so many provisos and such wide conditions that the authors were in effect guarded against any and every outcome of the orders issued.¹⁵⁴

Furthermore, in his interviews with his biographer Dudley Saward, Harris had, on several occasions, ranked Bottomley with those others in the Directorate of Bomber Operations whom he perceived as at the least obstructionists. In one tape he described Bottomley as “doing his damndest to discredit me in the hope of getting my job.”¹⁵⁵ In another, Harris alleged that the staff in the Directorate of Bomber Operations were “behind all our troubles with the Air Ministry – always trying to run the show . . . without the responsibility. I am sorry to say . . . that Norman Bottomley was always whispering things in Portal's ear.”¹⁵⁶

At the very least, Harris's assessment of Bottomley, in his letter of 24 January, was markedly at variance with the judgement he delivered in later years when interviewed by Saward. Either the antipathy he had displayed towards the Air Staff during the war years had developed into bitterness with the passage of time, or he was insincere in his protestation of ‘personal regard and admiration’ for Bottomley.

Next, Harris turned his attention to considerations which he believed were necessary in order to meet Bomber Command's most urgent requirements. He suggested the resumption of regular meetings at the Air Ministry that included the American bomber commander. Major General Carl (‘Tooey’) Spaatz, the Commander of the United States Strategic Air Forces in Europe, an ardent supporter of the Oil Plan, was also perceived by Harris to be a problem. According to Harris, Spaatz was a “weather cock”. Every time we meet, declared Harris, he

is pushing yet another bright idea, often in conflict with what he had suggested only the previous day. Policies agreed upon would be opposed by Spaatz at the next meeting with Eisenhower when he would suggest, "doing something else, or everything else, or anything else but."¹⁵⁷ Spaatz, Harris protested, imagined himself to be "running the show as a one-man band, except insofar as the British occasionally make a few noises off."¹⁵⁸

Before closing his letter, Harris made another plea for his area bombing policy to be better understood. A further determined effort, he believed, would ensure the destruction of the majority of the remaining cities in eastern Germany, would thereby increase the pressure on Berlin, and would mean the end of Germany. He conceded that it was difficult to get American support for his area bombing programme, but then repeated his claim that Bomber Command, alone, could achieve the desired aim. His one regret, he continued, was that the policy his force had pursued for three years should now be subjected to a unwarranted change of horses in mid-stream. To attempt to deprive the enemy of oil, he claimed, meant that the bomber force was being used defensively when victory was about to be won by its offensive use against German cities.

This letter ended with an apology. Harris confirmed that he accepted, without reservation, that he had misinterpreted Portal's words when he complained that he had been charged with disloyalty. He declared that he regretted the disagreement that had arisen between them, and assured Portal that Bomber Command would do its utmost to carry out the laid down policy.

Bottomley was given access to this latest letter from Harris and provided some notes for Portal for his consideration in formulating a suitable response.¹⁵⁹ These notes bear the hallmark of Bufton although nowhere is his name mentioned. They strongly make the point that bombing policies were never determined by junior officers. Harris was also firmly reminded that he had been fully consulted when the original combined bomber offensive was under consideration, and again when the Directive for *Overlord* was being discussed. It was also pointed out to Harris that the Directive of 25 September 1944, the oil directive, was only issued after discussions between himself, Spaatz, Tedder and Bottomley. Minor changes had taken place with regard to this latter Directive, but Harris was reminded that at all times he had been at liberty to either criticise or suggest amendments in the light of what he saw as possible tactical, or other limitations.

Perhaps, suggested Bottomley, Harris's criticisms were directed at the actions of the Combined Strategic Target Committee, whose task it was to determine the relative priorities of the targets within the approved target systems. Here we see the hand of Bufton. Bottomley's notes made clear that it was both impracticable and inappropriate for Harris to be consulted directly on the question of individual targets. Bomber Command was represented on the Committee, and it was Harris's responsibility to ensure that his representative there could either authoritatively advise on the matters under consideration, or refer them directly to Harris for his opinion. In any case, Bottomley explained, the minutes of the CSTC meetings were very detailed, and were circulated to Harris and the various bomber commands for their consideration and, if necessary, criticism.

The other main point made in Bottomley's notes related to the call from Harris for the resumption of regular Commanders' Conferences. He agreed that such meetings could do nothing but good. However, they would have to be held without the presence of Portal. Portal exercised his authority under the Combined Chiefs of Staff jointly with Arnold and, for him to appear alone could be interpreted as an undue exercise of that shared authority.

Bottomley's two main points were fully accepted by Portal in his response to Harris on 25 January 1945.¹⁶⁰ The wording was almost identical. Portal offered to resume his regular but unofficial weekly talks with Harris on mutually agreed days. However, Portal also took issue with Harris over his interpretation of offensive air power. Harris, he affirmed, regarded the destruction of German industry, thus producing an armament shortage, as a highly offensive action. On the other hand, the destruction of German oil, without which the enemy armaments could not be employed or the war effort continued, appeared to be regarded by Harris as a purely defensive policy. "Still" Portal concluded, "it is not worth bothering about somewhat academic arguments, at any rate on paper."¹⁶¹

Apart from his involvement in the Portal/Harris dispute over oil, in January 1945, Bufton had pointed out to Bottomley that the Air Staff's plans for the employment of the Allied bomber commands were all too frequently side-tracked. In theory, the two Air Forces operated under a basic directive that provided both a common direction and aim. It was Bufton's opinion that while Bomber Command and the American XVth Air Force together with 205 Group operating from Italy, were doing well in the oil campaign, the VIIIth American Air Force was not. Its

efforts too often were being directed against such targets as jet aircraft, tanks, communications, bridges, and oil, without achieving significant successes in any area. "Its strategical accomplishment" he observed, "is being subordinated to tactical expediency instead of its tactical methods being bent on strategical requirements"¹⁶²

Many of the criticisms made by Bufton in the note just mentioned, were repeated in comments he made to Williams later the same month. Blame for the situation that had arisen was placed on the excessive control exercised by Eisenhower's Headquarters. This, coupled with Spaatz's close contacts with SHAEF and the Army Commanders, had meant that requests for direct support operations from either of these areas, always received priority. Thus, long term strategic aims were subordinated to the immediate short-term tactical needs of the armies. Oil, asserted Bufton, "should continue to take precedence over everything else."¹⁶³

Although it is impossible now to know the figures on which Bufton based his judgements, perhaps to provide a balance, some of the figures later available should be examined. To say the least they are extremely contradictory. The *Bomber Command Quarterly Review* for October-December 1944 provided a table that showed area bombing, in that period, had taken up the majority of Bomber Command's efforts. It had consumed fifty-three per cent of the bombing effort. Rail and water transport had taken up fifteen per cent, enemy troops and defences thirteen per cent, while naval and other targets provided five per cent. Oil, the primary target according to the current Directive, was accorded only fourteen per cent of the total effort.¹⁶⁴

Did Bufton have those figures available when he made his assessment that Bomber Command's efforts against oil were going well? Would he have expressed satisfaction at those figures? Did fourteen per cent amount to Bomber Command having made a major contribution to the oil programme? Admittedly, Bomber Command's strength had increased enormously since the same quarter in 1943, when the total tonnage of bombs dropped had been only 40,070. The figure for the same period in 1944 was 163,000 tons. The vital statistic, however, must surely be that only fourteen per cent of the effort went into attacking oil targets.

As further evidence of the conflicting nature of the evidence available, the bomb tonnages dropped on oil targets in another file provide an illuminating but

disturbing comparison. The figures for Bomber Command October - December 1944 were 3,653, 13,030, and 5,109 British long tons. The figures for the Eighth Air Force over the same period were 8,139, 27,447, and 6,953 long tons.¹⁶⁵ Had these figures been available to Bufton he would have been hard pressed to sustain his argument relating to his supposed failure of the Americans to press home the attack of German oil. The reduced figures for the December attacks can be well understood when it is remembered that in mid-December, under cover of appalling weather conditions, the Germans had launched their surprise offensive in the Ardennes.

By early January 1945 concern was being widely expressed at the increasing bomb tonnages being dropped on non-oil targets. Cherwell, in a note to Churchill, claimed that three times as great a weight of bombs had fallen on communication targets during the last quarter of 1944, as had been directed against oil targets. He agreed that some attacks against bridges and supply lines could be justified, but declared that bombing railway marshalling yards and locomotive depots was a waste of effort if it was aimed at the long term attrition of German communications: "Even a part of the weight directed against railway yards would cause a notable fall in German oil supplies."¹⁶⁶

Churchill, having been prompted by Cherwell, reminded Portal of the importance of bombing oil targets. He closed his minute: "I trust they will not be neglected in favour of the long-term attrition of German communications, about which I have always had doubts."¹⁶⁷ In response the same day, Portal confirmed that he and all of the Air authorities were fully agreed that oil was to continue to be given top priority. "The bombing of communications" he concluded,

is only justifiable at this time either to delay the departure of divisions for Russia, to turn the scale in a critical situation in the West, or when weather conditions prevent the attack of first priority targets.¹⁶⁸

Despite the pressures applied, the problem remained. Communication targets continued to receive what many thought was undue attention from the Allied bombing forces. To help solve the apparent *impasse*, Bufton appealed to Oliver Lawrence of the MEW, not always a supporter of the oil plan. He reminded Lawrence that at the last meeting at SHAEF, Tedder had stressed the importance

of dislocating the main centres in the Ruhr. Tedder, backed by Brigadier Foord, claimed that benzol plants should only be regarded as last resort targets. They argued that there was so little petrol being used by the enemy on the Western Front that it would require an enormous bombing effort to produce appreciable effects.

Buften was adamant. He believed that the oil bombing programme had brought the possibility of a decisive result within a measurable distance. He saw no benefit to be gained by attempting to differentiate between oil, gasoline, or benzol, as target systems. All, he attested, were of equal importance to an enemy in straitened circumstances. Buften reminded Lawrence that the wider picture of the war had always to be kept in mind. Total immobilisation of the enemy forces was the aim. As well, the attack on oil provided many side benefits. Indirect damage to industry, communications, and morale, were always adjuncts to heavy bombing raids, important factors not to be overlooked. Lawrence was reminded that some in Eisenhower's headquarters held somewhat parochial views. As both he and Lawrence were members of the CSTC, Buften advocated that they "must judge the issue from the overall aspect."¹⁶⁹

In mid-March 1945 Buften still found it necessary to bring to the attention of Air Vice-Marshal Williams, ACAS (Ops), that he considered that the Eighth American Air Force was not always adhering to the Combined Chiefs of Staff Directive with regard to their attacks on oil targets.¹⁷⁰ According to Buften's information, the Eighth Air Force on 15 March had launched 1,256 heavy bombers against two targets deep in Germany. The targets attacked were the railway marshalling yards at Oranienburg (sixteen miles north of Berlin), and the Headquarters of the German High Command at Zossen (twenty-four miles south of Berlin). Meteorological forecasts for these raids suggested fine clear weather in the target areas with light winds at bombing levels. Similar conditions were forecast for Ruhland, Bohlen, and Misburg, all prime oil targets.

Buften believed that a great opportunity had been missed to immobilise three of the four first priority targets and, by doing so, the Americans had ignored their Directive. For their part, the Americans claimed that the attack on Zossen was at Russian request, and was therefore a gesture of collaboration.¹⁷¹ Buften then pointed out that the actions on 15 March were not an isolated example. On 22 February, when widespread attacks on German communications were made,

oil targets had been largely ignored. He then quoted actions on 13 March. Although 1,256 American heavy bombers were briefed to attack sixteen specific targets, only two were oil refineries, and they only received the attention of sixty-eight and seventy-seven Fortresses respectively. Such derelictions, declared Bufton, would have but one result. The enthusiasm and determination of the crews of Bomber Command, with regard to what they saw as the primary target system, would be undermined.

This note was closed by Bufton pointing out that it appeared to him that the Eighth Air Force was attempting to spread its wings over too many targets. Many were relatively unimportant. Perhaps the intention, he suggested, was to largely avoid heavily defended areas and thereby achieve good operational results. Such actions, Bufton concluded, were carried out at the expense of strategic considerations and incurred the risk of the offensive against oil losing its impact. Bufton called upon Williams to suggest to Portal that he and Arnold reaffirm the need for all Air Forces to adhere even more rigidly to their laid down priorities, as prescribed in the current Directive.

In June 1945, with the European war now over, the Working Committee (Oil) of the CSTC issued their final bulletin.¹⁷² It was a full review of the air offensive against enemy oil supplies covering the entire war. It began by declaring that the offensive against oil, launched by an inadequate Bomber Command in 1940, was conducted with commendable enthusiasm but achieved very little success. It then posed the question that in view of later successes, what might have been the course of the war if Bomber Command had been capable, in 1940, of effectively attacking the German and Italian oil industries, as they then existed: their synthetic oil industry still under construction, lacking the crude production and refineries of Romania and Hungary, and without the substantial stocks that were later looted from overrun territories in the west.

This bulletin made no strenuous claims for successes in the oil bombing policy. Nor did it attempt to evaluate the contribution that the oil offensive made in bringing about the unconditional surrender of the German forces. Harris, in his *Despatch on Air Operations*, was equally reticent. Oil received two small paragraphs, twenty-eight lines in all, only two lines longer than the section relating to the bombing in support of the crossing of the Rhine in the final stages of the conflict. Runstedt's offensive in the Ardennes was accorded sixty-nine lines.

In summation the oil offensive, although it played a vital role in Germany's defeat, could have been even more effective had it been conducted in accordance with the Air Staff's wishes and orders. German armies in the field, apart from the abortive Ardennes offensive, appear to have suffered little from oil shortages but the *Luftwaffe* was badly affected. Training was severely reduced so that, largely as a result of the oil shortage, *Luftwaffe* crews went into combat less well prepared than their Allied counterparts. From July 1944 to the end of the war, flying time for German student pilots, prior to joining operational units, averaged 125 hours; for British and American trainees in the same period the average was slightly over 350 hours. Of even greater importance is that while German pilots only received about twenty hours training in operational aircraft, Allied pilots averaged 130 hours.¹⁷³

Fuel problems coupled with a reduced number of flying instructors and manpower shortages resulting from the transfer of *Luftwaffe* personnel to fight futile infantry battles, also meant that many of the aircraft produced in 1944 remained on the ground lacking both fuel and trained crews. From 1939 to 1943 German aircraft factories produced 23,508 fighter aircraft; in 1944 alone a further 25,285 were completed.¹⁷⁴

Area bombing was allowed to consume too large a proportion of both bomber Command's manpower and material resources for too little return in either economic or industrial destruction. Certainly German industry ground to a halt but that was not because of area bombing attacks on cities. That particular problem for Germany had been created by the many successful attacks on communication facilities which so disrupted the rail system that the coal on which industry relied, could not be delivered. By failing to reel in his headstrong bomber commander, Portal must thus be identified as possibly being at least partially responsible for having prolonged the war.

Another who must bear his share of criticism is Prime Minister Churchill. The support he provided Harris played an important part in the prolongation of the area bombing campaign. Moreover, his sharp note to Sinclair on 26 January 1945 demanding attacks on the East German cities is indicative of the interest he continued to maintain in area attacks. It also provides verification, if that is required, that Churchill retained the ultimate authority and influence in all military affairs concerning the British establishment. His ultimate rejection of Bomber

Command, its leader, and its crews, following the bombing of Dresden in February 1945, does nothing but make him a lesser man.

Although this chapter has dealt at length with the serious differences of opinion between the Air Staff and Harris regarding target priorities over the winter of 1944/45, it must be made clear that Bomber Command provided a significant and vital contribution to the oil offensive in that period. From October 1944 to April 1945 Bomber Command dropped a total of 78,906 short tons of bombs on oil targets while the Eighth and Fifteenth American Air Forces only dropped a total of 70,526 short tons.¹⁷⁵ Not only did Bomber Command release a greater total weight of bombs but their individual bombs averaged 660 pounds while the American bombs only averaged 388 pounds.¹⁷⁶ It must also be emphasised, the heavier the bomb, the greater the damage created. Additionally, the bombs released at night employing PFF methods by Bomber Command were aimed more accurately than those dropped by the Eighth Air Force using H2X.¹⁷⁷ Oil was the priority during this period and Portal had stressed that it was so important that, if necessary, risks had to be taken. Bomber loss rates both by day and night operations at this time were only of the order of one per cent but Portal made clear that losses of

up to 5% or even 10% in successful attacks on LEUNA, POLITZ and BRUX would be well worth-while . . . it was worth paying a high price to put those particularly important plants well and truly out of action for a long period.¹⁷⁸

For his part, Harris had argued that although he had no faith in the oil policy,

I have not failed in any worth-while efforts to achieve even those things which I knew from the start to be impracticable, once they had been decided upon. In this decision on oil I was given no prior opportunity to present my views. But I have in fact risked, luckily so far with success, weather conditions which I would not have faced in ordinary circumstances.¹⁷⁹

Unfortunately, from October 1944 to 8 May 1945, the figures provided by Bomber Command are proof that insufficient efforts were made, or perhaps, not enough risks taken with the weather, in the effort to destroy Germany's oil resources. During those slightly over seven months, oil targets received twenty

per cent and Germany's industrial cities forty five per cent of the total bombing effort.¹⁸⁰

Perhaps Harris's failure to take the extra risks and press home the attack on oil more fully, had the result Portal had suggested in November 1944 when he advised Harris

In the light of all available intelligence I feel the whole war situation is poised on "oil" as on a knife edge, and that by a real concentration of effort at this time we might push it over on the right side . . . if we give anything away . . . the Germans may get into quite a strong position in the air and hold it long enough to prolong the war by several months at least.¹⁸¹

It was an assessment with which Webster and Frankland could later find no reason to disagree.¹⁸²

The surprising element relating to Bomber Command's part in the oil offensive over the winter of 1944/1945 is that the limited efforts made produced such significant damage. What would the results have been had Harris been able to provide the extra pressure that Portal and the Air Staff had called for in the attack of German oil facilities?

In the final analysis concerning German oil, Harris yielded. In *Bomber Offensive*, although he continued to claim that area bombing should never have been given up, he acknowledged that

the offensive against oil was a complete success . . . but I still do not think that it was reasonable, at that time, to expect that the campaign would succeed; what the Allied strategists did was bet on an outsider, and it happened to win the race.¹⁸³

The admission may have satisfied Portal, but it does not answer the question of why no firm action was taken against Harris when he was blatantly ignoring the instructions issued by his Commander-in- Chief. I suggest that there will never be a clear answer. However, there is one fact that cannot be denied: Portal allowed a subordinate to flagrantly and repeatedly ignore the requirements regarding German oil clearly and repeatedly spelled out by the Air Staff. By so doing he not only allowed a question to be raised as to his leadership qualities, but also thereby weakened his position as leader.

End Notes

- ¹ *La victoire des Alliés sur L'Allemagne fut la victoire du camion sur la locomotive.* See Chiefs of Staff Committee, *Oil as a Factor in the German War Effort, 1939-1945*, (London, 1946), p. 1, para. 2. For future references, see COS Cttee.
- ² Ronald C Cooke & Roy Conyers Nesbit, *Target: Hitler's Oil*, (London, 1985), p. 140.
- ³ COS Cttee, pp. 8 and 10.
- ⁴ R J Overy, *War and Economy in the Third Reich*, (Oxford, 1994), p.190.
- ⁵ Alan S Milward, *The German Economy at War*, (London, 1965), p. 20.
- ⁶ PRO AIR 41/39, Wernham and Frankland, *The R.A.F. in the Bomber Offensive against Germany*, p. 304.
- ⁷ Ibid., p. 305.
- ⁸ PRO AIR 40/1269, *Minutes of the 11 First Meeting of CSTC*, 18 October 1944, pp. 1.and 2. See also Alfred C Mierzejewski, 'Intelligence and the Strategic Bombing of Germany. The Combined Strategic Targets Committee', in *International Journal of Intelligence and Counterintelligence*, Vol. 3, No. 1, Spring 1989.
- ⁹ Webster and Frankland, Vol. IV, p. 132, para. 1(I).
- ¹⁰ Robert Rhodes James, (Ed.), *Winston S Churchill His Complete Speeches 1897-1963*, Vol. VI, 1935-1942, (New York, 1974), p. 6222.
- ¹¹ J M Speight, 'Strategic Air Bombardment', in *The Royal Air Force Quarterly*, Vol. XIX, No. 1, January 1948, p. 23.
- ¹² Portal Papers, File 9, 1941, 6, Portal to Peirse, 15 January 1941, para. 1.
- ¹³ Portal Papers, File 9, 1941, 9, Peirse to Portal, 28 February 1941, para. 2.
- ¹⁴ Portal Papers, File 9, 1941, 9a, Portal to Peirse, February 1941, para. 1.

- ¹⁵ Bufton Papers, 3/48, 'Bombing Policy,' paper by Director of Bomber Operations, 7 March 1941, para. 8.
- ¹⁶ Cooke & Nesbit, *Target: Hitler's Oil*, p. 41. See also Charles O Richardson, 'French Plans for Allied Air Attacks on the Caucasus Oil Fields January-April 1940' in *French Historical Studies*, Vol. VIII, No.1, Spring 1973.
- ¹⁷ PRO AIR 23/980, Air Staff Plans, Middle East, *Outline Plan for the Dislocation of the Russian Oil Organisation by Air Attack*, 3 August 1941, paras. 8 and 13.
- ¹⁸ Slessor, *The Central Blue*, p. 270.
- ¹⁹ PRO AIR 20/8058, Deputy Director of Plans to Portal, 3 July 1941, para. 1. Underlining in the original.
- ²⁰ Ibid., Portal to DCAS, 4 July 1941, para. 1.
- ²¹ Webster and Frankland, Vol. IV, Hankey to Chiefs of Staff, 15 July 1941, p. 203, para. 3.
- ²² Bufton Papers, 3/11, Lawrence to Lord Selborne, 4 February 1942, p.4, para. 12.
- ²³ Webster and Frankland, Vol. IV, Stanley to Chiefs of Staff, 16 April 1942. pp. 228-230.
- ²⁴ PRO AIR 20/8058, Bottomley to Harris, 3 September 1942, para. 3.
- ²⁵ Portal Papers, File 9, 1942, 66, Harris to Portal, 21 October 1942, p. 2, paras. 6 and 8.
- ²⁶ Bufton Papers 3/54, 3 February 1943, para. 27.
- ²⁷ PRO AIR 20/8058, Air Staff Note, 'A Review of the Possibilities of an Attack on Enemy Oil Targets in Relation to Our General Bombing Policy', 17 April 1943, p. 6, para. 19.
- ²⁸ Bufton Papers 3/77, Bufton to Bottomley, 6 July 1943.
- ²⁹ Ibid., Morley to Bufton, 5 July 1943.
- ³⁰ Ibid., para. 7.
- ³¹ Ibid., Bottomley to Eaker, 8 July 1943.
- ³² Ibid., Air Staff to Washington, repeated to Tedder and Douglas, 12 July 1943, para. 3.
- ³³ PRO AIR 20/8058, Bufton to Bottomley and Coryton, 4 November 1943, para. 4.
- ³⁴ Ibid., para. 7.
- ³⁵ Ibid., Bufton to Bottomley, 29 November 1943, para. 5.
- ³⁶ PRO AIR 20/8058, Bufton to Inglis (Director of Intelligence), 7 March 1944, para. 5.

- ³⁷ PRO AIR 20/4765, 2 April and 13 April 1944.
- ³⁸ Webster and Frankland, Vol. III, p. 32.
- ³⁹ Bufton Papers, 3/38, Lawrence to Bufton, 'Economic Priorities for Night Attacks in the Ruhr - Rhineland Region,' 24 May 1944, p. 1, para. 2.
- ⁴⁰ The Americans had bombed Ploesti in August 1943 (with disastrous losses) and again in April 1944. They attacked German synthetic plants three times in May 1944 as an experiment to attract German fighters into the air.
- ⁴¹ Bufton Papers 3/38, Lawrence to Bufton, 24 May 1944, p. 8, paras. 36 and 37.
- ⁴² PRO AIR 2/4477, Bufton Paper, 'Selection of Aiming Points for Bomber Command in the Ruhr/Rhineland Area', 2 June 1944, p. 3, para. 11.
- ⁴³ Ibid., p. 5, para. 18.
- ⁴⁴ Ibid., Bottomley to Harris, 3 June 1944, para. 4.
- ⁴⁵ Bufton Papers 3/47, Bottomley to Harris, 13 April 1944, para. 3. This transfer of authority was fully discussed in Chapter Six.
- ⁴⁶ PRO AIR 41/56, G.R.M. Hartcup, *The R.A.F. in the Bombing Offensive Against Germany, The Final Phase March 1944 – May 1945*, (London, 1955), Vol. VI, p. 53. Hereafter, PRO AIR 41/56, Hartcup, page number.
- ⁴⁷ PRO AIR 14/3451, *Bomber Command Quarterly Review' April-May-June 1944*, No. 9, pp. 1 and 3.
- ⁴⁸ PRO AIR 2/4477, Harris to Under Secretary of State, 13 June 1944, para. 4.
- ⁴⁹ Harris Papers H57, Harris to Bennett, 17 June 1944, para. 2.
- ⁵⁰ PRO AIR 8/1018, Bufton to Portal, 7 July 1944. Added as a postscript.
- ⁵¹ Ibid., 25 July 1944, paras. 5, 6 and 7.
- ⁵² PRO AIR 41/56, Hartcup, p.58.
- ⁵³ Patrick Macdonald, *Through Darkness to Light*, (Soham, 1990), p. 104.
- ⁵⁴ Denis Richards and Hilary St G Saunders, *Royal Air Force 1939-1945*, (London, 1954), Vol. II, p. 348.
- ⁵⁵ Ibid., Vol. III, pp. 226-7.
- ⁵⁶ PRO AIR 25/818, R A F Form 450, Operations Record Book, HQ No. 205 (Medium/ Heavy) Bomber Group, May 1944, p. 129. Future references, Form 450, No 205 Group.

- ⁵⁷ Webster and Frankland, Vol. IV, Appendix 23, para. 4(c), p. 277.
- ⁵⁸ Craven and Cate, *The Army Air Forces in World War II*, Vol. III, p.281.
- ⁵⁹ John Herington, *Air Power over Europe 1944-1945*, (Canberra, 1963), pp. 336-7.
- ⁶⁰ Craven and Cate, *The Army Air Forces in World War II*, Vol. III, p. 303.
- ⁶¹ Ralph Bennett, *Behind the Battle*, (London, 1994), p. 162.
- ⁶² Hinsley *et al*, *British Intelligence in the Second World War*, Vol. 3, Part 2, p. 502.
- ⁶³ PRO AIR 8/1018, Bufton to Assistant Chief of the Air Staff (Policy) Air Vice-Marshal C E H Medhurst, 21 August 1944, para.2
- ⁶⁴ PRO AIR 20/8058, Bufton to Bottomley, 26 August 1944, para 4.
- ⁶⁵ *Ibid.*, Bottomley to Bufton, 27 August 1944, para. 2.
- ⁶⁶ Webster and Frankland, Vol. IV, Section V, Appendix 32, Speer to Hitler, 30 August 1944, p. 333.
- ⁶⁷ PRO AIR 20/8058, Bufton to Bottomley, 4 September 1944, para. 3.
- ⁶⁸ PRO AIR 8/1018, Bufton to Medhurst, 19 September 1944, para. 4.
- ⁶⁹ Bufton Papers 3/51, Portal Note, 20 July 1944, para. 4. See also Bufton Papers 3/51, Bufton to Bottomley, 20 July 1944. The matter will be dealt with in greater detail in a later chapter.
- ⁷⁰ Webster and Frankland, Vol. IV, Appendix 8, p. 172, para. 1.
- ⁷¹ PRO AIR 14/3452, *Bomber Command Quarterly Review, July-September 1944*, No.10, p. 1.
- ⁷² Saward Interview, Tape 8, Side B, 1972
- ⁷³ Bufton Papers 3/38, 2 October 1944, paras. 1 and 2.
- ⁷⁴ Bufton Papers 3/45, Minutes, para. 2.
- ⁷⁵ *Ibid.*, para. 10.
- ⁷⁶ Bufton Papers 3/47, 13 October 1944, para. 9.
- ⁷⁷ *Ibid.*, Bottomley to Harris, 19 January 1945.
- ⁷⁸ PRO AIR 37/1034, Tedder, 'Notes on Air Policy to be Adopted with a View to Rapid Defeat of Germany,' 25 October 1944, p. 2, para. 11. See also Roderic Owen, *Tedder*. (London, 1952), pp. 264-267. See also Tedder, *With Prejudice*, pp. 607-611.

⁷⁹ PRO AIR 8/1018, 16 October 1944, para. 1.

⁸⁰ Ibid., para. 4.

⁸¹ PRO AIR 40/1269, Minutes of First Meeting of CSTC, 18 October 1944, p. 2, para. 6.

⁸² Bufton Papers 3/45, Morley to Tedder, 30 October 1944, para. 7.

⁸³ Ibid., Bottomley to Harris, 1 November 1944, para. 1.

⁸⁴ Bufton Papers 3/47, Directive No. 2, 1 November 1944.

⁸⁵ Portal Papers, File 10, 1944, 32, Harris to Portal, 1 November 1944, p. 3. Note, 'BRADDOCK' was the code name for an operation to distribute sabotage material throughout Germany.

⁸⁶ Ibid., 32a, Portal to Harris, 5 November 1944, para. 7. Underlining in the original.

⁸⁷ Ibid., para. 2.

⁸⁸ G.H., also known as Gee H, was a navigation and bombing aid that came into operational use early in 1944. In July it was decided that 3 Group would be fully equipped with the aid for blind bombing purposes. The basic principle underlying its use was the measurement of the time interval between two radio pulses. It differed from Gee in that Gee measured the time interval between reception of pulses whereas Gee H measured the interval between transmission of a pulse by the aircraft and the reception of a transponded pulse from a ground beacon. The speed of radio waves is known and thus time interval is directly proportional to distance. It could be used by many aircraft at the same time, like Gee but unlike Oboe, and had a similar range. It did, however, require transmissions from the aircraft which was an operational give-away. Lattice charts were produced for use as a navigation aid.

⁸⁹ Portal Papers, File 10, 1944, 32a, Portal to Harris, 5 November 1944, para. 13.

⁹⁰ Portal Papers, File 10, 1944, 32b, Harris to Portal, 6 November 1944, p. 1, para. 4.

⁹¹ Ibid., p. 2, para. 10.

⁹² Ibid., p. 2, para. 14.

⁹³ Bufton Papers, 3/51, Bufton to Portal, 11 November 1944, para. 3 Underlining in the original..

⁹⁴ Ibid.

⁹⁵ Ibid., para. 4.

⁹⁶ Ibid., para. 17. Underlining in the original.

⁹⁷ Ibid., para. 20.

⁹⁸ Ibid., para. 23.

⁹⁹ Ibid., Bufton to Portal, Draft, 12 November 1944.

¹⁰⁰ Portal Papers, File 10, 1944, 32c, Portal to Harris, 12 November 1944.

¹⁰¹ Ibid., p. 3, para. 14.

¹⁰² Webster and Frankland, Vol. IV, Bottomley to Harris, 13 November 1944, p. 299, para. 9.

¹⁰³ PRO AIR 8/1018, Chiefs of Staff Meeting, 14 November 1944, p. 2, para. 6.

¹⁰⁴ Portal Papers, File 10, 1944, 36, Harris to Portal, 24 November 1944, para. 2.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid., p. 2, para. 3.

¹⁰⁷ Bufton Papers 3/45, Bufton Draft, Portal to Harris, 6 December 1944. Portal's letter is in Portal Papers, File 10, 1944, 36a, Portal to Harris, 6 December 1944.

¹⁰⁸ Ibid., Portal's reply was an exact copy of Bufton's draft.

¹⁰⁹ PRO AIR 8/1020, Harris to Portal, 12 December 1944, para. 2.

¹¹⁰ Ibid., p. 3, para. 12.

¹¹¹ PRO AIR 20/8058, Bufton to Portal, 21 December 1944, p. 1, para. 1.

¹¹² Ibid., p. 2, para. 4.

¹¹³ Ibid., p. 4, para. 10.

¹¹⁴ PRO AIR 8/1020, Portal to Harris, 22 December 1944, p. 2, para. 11.

¹¹⁵ Bufton Papers 3/51, Portal to Harris, 22 December 1944, p. 2, para. 6. Underlining in the original.

¹¹⁶ Ibid., Underlining in the original.

¹¹⁷ Ibid., para. 7.

¹¹⁸ Ibid., para. 9.

¹¹⁹ Ibid.

¹²⁰ Ibid., para. 10.

¹²¹ Bufton Papers 3/51, Bufton to Williams, 21 December 1944, para. 4.

¹²² PRO AIR 20/8058, Bufton to Williams, 22 December 1944, Addenda, para. 3.

- ¹²³ Bufton Papers 3/51, Bufton to Bottomley and Williams, 24 December 1944, para. 7. Bufton and Tedder had disagreements over pre-invasion bombing policy, they had these while Tedder was Deputy Supreme Commander and they would have others when Tedder became CAS.
- ¹²⁴ PRO AIR 8/1020, Harris to Portal, 28 December 1944, p. 2, para. 8.
- ¹²⁵ Ibid., p. 3, para. 14.
- ¹²⁶ Ibid., p. 4, para. 20.
- ¹²⁷ Ibid., p. 2, para. 8.
- ¹²⁸ Ibid.
- ¹²⁹ Ibid., p.3, para. 13.
- ¹³⁰ Ibid., Hand written note.
- ¹³¹ Air Commodore John Searby, *The Everlasting Arms*, (London,1988), pp. 177-187. John Searby, a PFF pilot was posted to Bomber Command Headquarters as Command Navigation Officer in July 1944. He received a warm welcome from the officer he was replacing, a pleasure that was almost indecent, admitted Searby. Searby explains, at length, the strained situation at Bomber Command Headquarters under Harris's stewardship — an illuminating insight.
- ¹³² Bufton Papers 3/51, Bufton to Portal, 3 January 1945, pp. 1 and 2, para. 5.
- ¹³³ PRO AIR 8/1020, Harris to Portal, 28 December 1944, p. 4, para. 20.
- ¹³⁴ PRO AIR 8/1020, Harris to Portal, 29 December 1944, p. 3, para. 9.
- ¹³⁵ Harris Papers, H84, 14, Portal to Harris, 8 January 1945, p.1, para. 2.
- ¹³⁶ Ibid., p. 3, para. 6.
- ¹³⁷ Ibid., p. 8, para. 18. Underlining in the original.
- ¹³⁸ Portal Papers, File 10, 1944, 39, Harris to Portal, 29 December 1944, p. 2. The date on the letter is 1945 but this was clearly an error.
- ¹³⁹ Ibid.
- ¹⁴⁰ Portal Papers, File 10, 1944, 39a, Portal to Harris, 31 December 1944.
- ¹⁴¹ PRO AIR 8/1018, 2 January 1945, para. 1.
- ¹⁴² Ibid., para. 4.
- ¹⁴³ Bufton Papers 3/47, Directive No. 3, 15 January 1945, p. 2, para. 6.

- ¹⁴⁴ PRO AIR 8/1020, Harris to Portal, 18 January 1945, p. 1, para. 8.
- ¹⁴⁵ Ibid., p. 4. Underlining in the original.
- ¹⁴⁶ Ibid. Underlining in the original.
- ¹⁴⁷ Ibid., p. 4 and 5.
- ¹⁴⁸ Webster and Frankland, Vol. IV, pp. 337-340.
- ¹⁴⁹ PRO AIR 8/1020, Harris to Portal, 18 January 1945, p. 5.
- ¹⁵⁰ Portal Papers, File 10, 1945, 3c, Portal to Harris, 20 January 1945.
- ¹⁵¹ Ibid., p. 3.
- ¹⁵² Portal Papers, File 10, 1945, 3d, Harris to Portal, 24 January 1945, pp.2 and 3.
- ¹⁵³ Ibid., p.1.
- ¹⁵⁴ Harris, *Bomber Offensive*, p.215.
- ¹⁵⁵ Saward Interview, Tape 4, Side A, 1972.
- ¹⁵⁶ Ibid., Tape 7, Side A.
- ¹⁵⁷ Portal Papers, File 10, 1945, 3d, Harris to Portal, 24 January 1945, p.2.
- ¹⁵⁸ Ibid.
- ¹⁵⁹ PRO AIR 8/1020, Bottomley to Harris, 25 January 1945.
- ¹⁶⁰ Portal Papers, File 10, 1945, 3e, Portal to Harris, 25 January 1945.
- ¹⁶¹ Ibid., p. 2.
- ¹⁶² Bufton Papers 3/47, Bufton to Bottomley, 11 January 1945, p. 1, para. 2.
- ¹⁶³ Bufton Papers 3/51, Bufton to Williams, 25 January 1945, p. 1, para. 4. Underlining in the original.
- ¹⁶⁴ PRO AIR 14/3453, *Bomber Command Quarterly Review, October-December 1944*, No. 11, p. 2.
- ¹⁶⁵ PRO AIR 8/1020, No date.
- ¹⁶⁶ PRO PREM 3/12, Cherwell to Churchill, 26 January 1945, para. 2.
- ¹⁶⁷ PRO PREM 3/12, Prime Minister's Personal Minute, M 128/5, Churchill to Portal, 28 January 1945.

- ¹⁶⁸ Ibid., Portal to Churchill, 28 January 1945, para. 2.
- ¹⁶⁹ Bufton Papers 3/51, Bufton to Lawrence, 25 February 1945, p. 2, vii.
- ¹⁷⁰ Ibid., Bufton to Williams, 15 March 1945, para. 5.
- ¹⁷¹ Craven and Cate, *The Army Air Forces in World War II*, Vol. III, p. 743.
- ¹⁷² Bufton Papers 3/63, Bulletin No. 1945-19, 21 June 1945.
- ¹⁷³ Williamson Murray, *Luftwaffe*, (London, 1985), pp. 274--280.
- ¹⁷⁴ Werner Baunbach, *Broken Swastika*, (London, 1986), p.211.
- ¹⁷⁵ PRO AIR 41/56, Hartcup, pp. 175 and 230.
- ¹⁷⁶ Cooke and Nesbit, *Target: Hitler's Oil*, p. 203.
- ¹⁷⁷ Ibid., p. 203.
- ¹⁷⁸ Harris Papers, H84, 1A, Portal to Harris, 8 January 1945, p. 2, para. 5.
- ¹⁷⁹ Ibid., 9A, Harris to Portal, 28 January 1945, p. 5.
- ¹⁸⁰ PRO AIR 14/3453, *Bomber Command Quarterly Review*, No. 11, p. 2 and PRO AIR 14/3454, *Bomber Command Quarterly Review*, 1945, p. 4.
- ¹⁸¹ Portal Papers, 1944, File 10, 32a, Portal to Harris, 5 November 1944, p. 3.
- ¹⁸² Webster and Frankland, Vol. III, p. 243.
- ¹⁸³ Harris, *Bomber Offensive*, p. 220.

Chapter Eight

Target - Enemy Morale

On 1 September 1939, following the German invasion of Poland and with the British Government having threatened war unless the German forces withdrew, President Roosevelt made an appeal to the nations. He requested that, should total war eventuate, the

armed forces shall in no event and under no circumstances undertake bombardment from the air of civilian populations or unfortified cities, upon the understanding that the same rules of war-fare shall be scrupulously observed by all their opponents.¹

The appeal was welcomed and approved by both Britain and France while Hitler, making no reference to withdrawal from Poland, advised that the *Luftwaffe* would attack nothing but military objectives. Despite these tacit agreements the Second World War very shortly confirmed that in modern conflicts no distinction is made between combatants and non-combatants, or between military and non-military objectives. Cities became battlefields and the inhabitants found themselves in the front line. Morale had thus become a target. Morale, however, is a nebulous quality and its measurement in absolute terms is thereby rendered difficult. A capable commander is well able to measure the morale of his particular unit or squadron but can only describe it in general terms such as excellent, very good, good, poor or bad. Considerable efforts were devoted by both Allied and enemy intelligence agencies throughout the war in an effort to determine the opposition's morale but unfortunately the assessments made by Allied authorities, on several occasions, that German morale was on the verge of collapse, were wildly in error. On the whole the German people remained stoic and steadfast in their support of their leaders despite the calamities they nightly suffered. The long held belief, that a nation's morale could be broken by bombing, was found, in the Second World War, to have been faulty. Furthermore, the outcome of an attack directed at the morale of an enemy people depends not only on the form of government in that country but also on the disposition of the populace. In a democracy the government might well be induced to seek a peaceful solution

either from public pressure or from governmental benevolence — a desire to reduce suffering. But Germany in 1939 was a police state in which protest was *streng verboten*. Control was so rigidly enforced that even in 1945 one stood as much chance of being executed by the authorities for preaching surrender as of being killed by Allied bombing. At least, when bombed, one was only subjected to the laws of chance rather than those of an authoritarian society.²

Nevertheless, every act of violence directed at the enemy in a war situation is an attack on morale. Morale is influenced by many factors — what happens to those family members closest to you and by what happens to your workplace and your home. The loss of water supplies, the destruction of city transport facilities, the lack of fuel to heat the home, all contribute to influencing an individual's morale. One point, however, often overlooked, is that bombing rather than lowering morale may, in certain circumstances, have the opposite effect. Stephen Possony argued that

bombing has an *ambivalent nature*. At certain places and times, it may produce positive and at others negative morale reactions. Bombing may sometimes actually strengthen the opponent's morale, — at least on the behavior, if not on the verbal level.³

Unfortunately, the selection of morale as a target for Bomber Command was not a considered action. It was forced on the authorities because it had been learned that the targets requiring attention simply could not be located. But the city in which the particular factory operated could usually be found and therefore that city was bombed in the hope that among the destruction created would be the ruins of the particular factory. Churchill had defined the parameters as early as October 1917 when, discussing an earlier British air offensive, he made clear that

Our Air offensive should consistently be directed at striking at the bases and communications upon whose structure the fighting powers of his (the enemies) armies and his fleets of the sea and of the air depends. Any injury which comes to the civil population from this process of attack must be regarded as incidental and inevitable.⁴

Furthermore, when the Inter-Allied Independent Air Force heads of agreement concerning the constitution of the force were set down on 26 October 1918, the

object was defined as “To carry the war into Germany by attacking her industry, commerce and population.”⁵

Although Trenchard later, in 1928, had admitted the illegitimacy of bombing a city solely to terrorise the civilian population, he quoted an exception. He argued that

It was an entirely different matter to terrorize munition workers (men and women) . . . Moral effect is created by the bombing in such circumstances but it is the inevitable result of a lawful operation of war — the bombing of a military objective.⁶

Indeed, the RAF had exhibited few qualms of conscience when bombing civilians during their policing operations in the Middle East and on the North-West Frontier of India during the 1930s, so it is little wonder that Harris, in 1942, simply did not accept that he had any need to exercise restraint. His aim, as defined in the Directive he inherited and as he made clear on many occasions, was to create death and destruction in the German cities regardless of who died or what was destroyed. German morale was his target and thus it became a war waged against minds — “the nerve centres of the man-in-the-street.”⁷

Harris, of course, as befitted a disciple of Trenchard, was steeped in the belief of the value of the bomber as a morale lowering agent. During the 1930s the British people had grown to fear the threat posed by bombing aircraft — the surrounding seas, dominated by the Royal Navy, no longer provided the protection to which they had long been accustomed. Moreover, the Government had made clear that “in the next war the enemy would attempt to undermine civilian morale by an all out bombardment.”⁸ Public fears were greatly enhanced by what they read in their papers concerning the events in Abyssinia in 1935 and in both China and Guernica in 1937, in combination with the increasing threat posed by a militant Germany. In 1938, the editor of *Aeroplane* called upon the public to

face facts and try not to be hypocrites. Over and over again people in Parliament bring up this business about not bombing civilians in time of war. Why not face the fact that in time of war there are no civilians?⁹

Enemy morale however, rather than being an incidental target, had, from an early date in the Second World War, become the primary but unadmitted aim of the bombing offensive. At first it was not viewed necessarily as providing the way to ultimate victory and no one attempted to clarify how a possible breakdown of enemy morale might lead to unconditional surrender. No answers were provided to the many questions such as: what is required to create a breakdown of morale?; whose morale must be broken?; could a country's morale be broken?; is it necessary to break the national morale or, would the collapse of local morale be sufficient?; or what amount of bombing is going to be required to bring about collapse? No answers were provided for any of these and other questions regarding morale because nobody ever thought to enquire. Morale bombing, at least until the Directive of February 1942, was, despite the primary role it was playing, an accidental and incidental part of the strategic bombing offensive and remained largely beyond the general public's knowledge.

Harris, however, unable to accept that the pre-war bombing doctrine had failed, refused to adapt to the new requirements late in 1943, and throughout his tenure as AOC-in-C Bomber Command relentlessly pursued the area/morale bombing path. His actions, while confirming his doggedness, also testified to his inability to readily change or recognise when modifications to the bombing plan were urgently required.

From an early stage in the conflict, as far as some in the Air Staff were concerned, the gloves were off. On 18 September 1940 Air Vice-Marshal Sholto Douglas, the DCAS, advised Air Chief Marshal Sir Cyril Newall, the CAS, that Portal, then AOC-in-C Bomber Command, was planning to launch an attack on Berlin the next night. Portal's plan was that the bombers would release their bombs on the centre of Berlin although the only identifiable military targets in the area were the German War Office and the Air Ministry. He requested approval for the attack. Douglas opposed Portal's suggestion and called for an early decision. Newall minuted a reply the same day declaring, "Put some in the middle on 'Railway Communications' — don't mention War Office or Air Ministry."¹⁰ It was a subterfuge that would be long maintained and later adopted by the Americans to enable them to bomb targets obscured by cloud.

Although extravagant claims were made for the success of the bomber offensive during 1940 and 1941, it was not until August 1941 that the Butt Report

revealed the true state of affairs. Targets were not being found and very little damage was being created. It would appear, however, that perhaps some in the Directorate of Bomber Operations were already aware of the true facts. Although they had been long time supporters of the principle and efficacy of area bombing, in August 1941 they produced a paper which claimed that, with the navigation and bombing equipment then available, it was not possible to create either significant or lasting damage to key industrial targets. The focus of attack, the paper demanded, must be the German people in their homes and at their work places. Competent observers, the writer urged, "are unanimously of the opinion that the German people cannot, and will not, stand up to really heavy concentrated and sustained attacks."¹¹ Similar sentiments were expressed a month later when it was claimed, in an unsigned paper, that the Chiefs of Staff had agreed that the "weakest point in the German war machine is the morale of the civil population and in particular of the industrial workers."¹²

The Directive that Harris inherited on becoming AOC, Bomber Command, on 22 February 1942, provided him with a wide range of industrial targets in western, southern, and northern Germany. It also required him to attack the morale of the German people. Issued on 14 February 1942, it lifted conservation measures in place over the winter, and advised that "the primary object of . . . operations should now be focussed on the morale of the enemy civil population and in particular, of the industrial workers."¹³ The plan accorded him considerable latitude in target selection but Harris's problems were the limitations in the numbers of aircraft and crews available, their tactical efficiency, and the need to overcome the vagaries of European weather. Area bombing and the destruction of enemy cities and the people therein offered Harris, so he believed, the way to total victory. He entertained no doubts: it was an opinion which never wavered, at least during the war.¹⁴

Harris was encouraged to pursue the policy laid down in the Directive because of his belief that the forces under his control lacked the ability to carry out an effective precision bombing programme. But the then Group Captain Sydney Bufton, for one, with some experience of bombing operations, viewed area bombing as but a stepping stone to a more efficient system. The first of the new aids, Gee, was coming into use and others, such as Oboe and H₂S, were in the pipeline. These bombing and navigational aids, together with the formation of a

target finding force, were sufficient for some to hope that the more productive precision bombing would come into its own in the near future.

Early in April 1942, Lord Cherwell, Churchill's scientific adviser, produced his de-housing paper for Churchill. He painted a picture showing that "about one-third of the German population would be turned out of house and home . . . There seems little doubt that this would break the spirit of the people."¹⁵ Cherwell's paper, however, was another example of wishful thinking. It merely provided confirmation for believers in the area bombing policy that they were on the right track. Pre-war, it had become accepted doctrine that bombers were capable of delivering a knock-out blow. That notion largely died early in the war although many continued to believe that Bomber Command was continuing to create considerable destruction, at least until the fallacy was exposed by the Butt Report in August 1941. Cherwell's paper resurrected hopes; hopes which in Harris's case were adhered to long after more efficient systems had become available.

As far as controversial matters between Harris and the Air Staff were concerned, much of 1942 was taken up with arguments relating to the use of incendiary versus high explosive weapons, and the controversy surrounding the formation of the Path Finder Force. But Harris was also concerned about morale in Bomber Command. In March 1942 he expressed his concern to Portal at the

spate of largely ignorant and uninstructed chatter against our bombing policy and against general efficiency and co-operativeness of the Royal Air Force . . . put out by interested parties in the other Services, by certain Members of Parliament with axes to grind and other influential people.¹⁶

Thus, Harris's organisation of the three 1,000 bomber raids in late May and June 1942 was a master stroke. With an average crew and medium and heavy bomber aircraft availability of only 346¹⁷ it required a supreme, and risky, effort. The actions of his bomber crews on these three nights secured the strong support of both Churchill, which virtually lasted until the bombing of Dresden in February 1945, and of Portal. It also raised morale within his Command and gained wide public support for the area bombing offensive. Cologne was the most successful of the three attacks but, although considerable damage was created, the city returned largely to normality within three months. Nevertheless, the perception of

some Service and civilian observers was that area bombing was a potential war winner. Unfortunately, the raids were aberrations, but while the true facts remained unknown, it was the perception that mattered.

During 1943 the primary mission for both the American and British bomber forces remained “the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened.”¹⁸ So, although subsidiary Directives may have varied target aims, ranging between oil, ball bearings, U-boats, transportation, and industrial targets in northern Italy, Harris remained authorised, and required, to attack German civilians.

In November 1943 Air Ministry Intelligence, in conjunction with the Political Warfare Executive, produced an eight-page appreciation of the effects of Allied air attacks on German morale for the period 15 July to 15 October 1943. Its summation for Harris and his supporters must have made heartening reading. “Fear of air attack” it asserted,

has been the dominant preoccupation of a large part of the German civilian population, and has contributed to produce a situation in which fear of the consequences of continuing the war is becoming greater than fear of the consequences of defeat.¹⁹

The paper suggested that, although there had been no general break in morale, further military defeats and the extension of the bombing over winter, “may exercise a decisive influence on conditions inside Germany,”²⁰

By late 1943, however, other influences were at work. Within the Air Staff there were those, including Bufton, who believed that it was high time, with the increased availability of improved navigation and bombing aids coupled with the leadership provided by the Path Finder Force, to return to precision bombing attacks. There were also those who, Harris claimed, were deliberately writing down the bomber offensive. His concern was that the British people were not being told the truth. Area bombing, as seen by Harris, was not the destruction of particular factories, but rather the killing of Germans or the rendering of them homeless and destitute. The aim of the Combined Bomber Offensive, he advocated in a letter to Sir Arthur Street the Under Secretary of State at the Air

Ministry, should be clearly, publicly, and unambiguously stated. "That aim" he continued, "is the destruction of German cities, the killing of German workers and the disruption of civilised community life throughout Germany."²¹ Acreages of housing devastation, he concluded, is infinitely more important than the factory damage by-products. Grotesque as these words may now seem, they were the authorisation, and the orders, that he had received from higher authority, whatever euphemistic terms they may have employed.

Harris, in initiating this exchange, was endeavouring to bring to the attention of the British public the true facts of the area bombing programme, sanctioned by the Chiefs of Staff, War Cabinet, and Churchill, and implemented by Bomber Command. One of his concerns was the morale of his bomber crews. If they were to read that Bomber Command was carrying out area attacks on cities while the Americans were doing precision bombing employing H2X on marshalling yards in those same cities, he feared their morale would fall. The use of such words gave the appearance that Bomber Command was attempting to do the same job as the Americans but doing it less well. In fact, with the weather conditions experienced in Europe in the winter of 1943/1944, both Bomber Command and the Eighth Air Force were heavily reliant on radar to carry out any bombing at all. Harris, of course, was arguing that a spade should be called a spade. Long after the end of the war Richard G. Davis made clear that the Eighth Air Force's use of the term 'marshalling yards' "undoubtedly served as a euphemism for city areas."²²

In his response, Street, reconfirmed the wording of both the *Casablanca* and *Pointblank* Directives and pointed out that neither required, nor enjoined, direct attack on German civilians. He reminded Harris that the public were well aware that large areas of German cities were being destroyed by Bomber Command. Nevertheless, he continued, "It is . . . desirable to present the bomber offensive in such a light as to provoke the minimum of public controversy and so far as possible to avoid conflict with religious and humanitarian opinion."²³ Public protests, he asserted, would hamper the government in the execution of their policy. They might also affect bomber crew morale. Therefore, the emphasis given in the publicity relating to the bomber offensive would not be altered.

Needless to say, such a bland refusal did not meet with Harris's approval. His first point was that he was seeking increased emphasis on, rather than casual references to, the bomber offensive, which, he declared, was largely responsible

for ground successes on the Russian front. Secondly, he denied that he had ever suggested that direct attacks on German civilians were part of Bomber Command's policy. Street's reply, added Harris, implied

that no German civilians are proper objects for bombing. The German economic system, which I am instructed by my directive to destroy, includes workers, houses and public utilities, and it is therefore meaningless to claim that the wiping out of German cities is 'not an end in itself but the inevitable accompaniment of an all out attack on the enemy's means and capacity to wage war'. . . the cities of Germany . . . are literally the heart of Germany's war potential . . . That is why they are being deliberately attacked.²⁴

In concluding his response to Street, Harris sought confirmation that the policy that Bomber Command was carrying out, the elimination of entire German cities, was considered both necessary and legitimate by the Air Council. He called for uncertainties to be

dispelled forthwith by an authoritative and unequivocal statement. It is not enough to admit that devastation is caused by our attacks, or to suggest that it is an incidental and rather regrettable concomitant of night bombing. It is in fact produced deliberately and our whole P.F.F. and navigational technique is primarily designed to promote it.²⁵

Harris attacked Street again in February 1944. His complaint related to attitudes he had perceived in both official documents, and in the public press, relating to German morale in bombed cities. He rejected the claim that the inhabitants of bombed cities had simply become apathetic. Were such views to be widely held, Harris declared, the inference could be drawn that further bombing directed against morale would be a waste of time. His understanding was that

incontestable evidence derived from Most Secret sources exists to show that the continuance and probable intensification of the Offensive is regarded in the highest Nazi circles as something which, in the absence of unpredictable errors by the Allies, will certainly ensure a German defeat comparatively quickly by producing a collapse of morale as well as of production on the Home Front.²⁶

Harris quoted no authority for his confidence in declining German morale but his 'Most Secret sources' may well have been decrypts of intercepted Enigma messages. Hinsley regarded the inference drawn by Harris as perfectly legitimate. His opinion was that "it does not seem unreasonable to infer, from these reports that by the middle of February the bombing had brought Germany to a crisis of morale which she had barely survived."²⁷ Unfortunately, Hinsley then weakened his case somewhat by noting that the critical messages from Japanese sources in Berlin to their superiors in Tokyo were not decrypted until May. By that time the JIC had concluded that a collapse of German morale, prior to D-day, was most unlikely.

In reply, Street agreed that

The fact that the attack on the German war economy involves the destruction of industrial cities is not in dispute . . . Nor has any attempt been made to disguise from the public the fact that your Command's attacks are aimed at the destruction of vast acreages of industrial cities."²⁸

Street did, however, point out that "The destruction of a German city which does not contain any military installations or any war production or organisation potential would not fall within the terms of your directive."²⁹

Harris, in closing this particular correspondence, acknowledged that he was

relieved to find therein explicit recognition of the fact that Bomber Command's attacks aim deliberately at the destruction of vast acreages of German industrial cities . . . any civilian who produces more than enough to maintain himself is making a positive contribution to the German war effort and is therefore a proper though not necessarily a worth while object of attack . . . I regret, however, that it is still considered inexpedient to recognise fully the strategic importance of results achieved . . . Such recognition would, no doubt, be embarrassing to those who have already decided that the War can only be won by more hazardous and costly methods, but this hardly seems an adequate reason for withholding it."³⁰

As frequently happened, Harris had enjoyed the last word in a correspondence war. What is perhaps remarkable is that it took place in such critical times. Over the same months that he was arguing semantics, Harris was

involved in arguments with Portal regarding oil targets, and with Bufton concerning ball bearings and Schweinfurt. In addition, Bomber Command was heavily involved in the Battle of Berlin, which could hardly be claimed as a victory, and, looming, was the forthcoming invasion of the Continent.

Harris excepted, there were few who at the end of 1943 were claiming that the strategic bombing offensive had been a success. Although bombing strength and capability had increased significantly, the results being achieved fell far short of the claims made, pre-war, for a strategic bombing offensive. Heavy losses were not the only problem; factories were found to have been harder to destroy than had been appreciated; intelligence relating to the true effects of bombing was meagre; and bombing accuracy had suffered because of weather conditions and the increasing strength of German defences, air and ground. The following seventeen months of war were to provide an enormous growth in Allied air power but Harris identified no requirement to change his targets. German cities and the morale of their inhabitants remained his focus.

Harris's call for clarification and confirmation of his Directive was justified because in 1943 and 1944 dissent was being expressed on the Home Front at the conduct of the bomber war. Not everyone accepted that the killing of civilians was a necessary part of the conflict. Area bombing meant that in some districts of the attacked city, destruction of both military and non-military installations would be complete. Air Ministry spokesmen became adept at providing pseudo-legal opinions that the accidental damage to non-military buildings was both justified and rendered acceptable by the fact that the destruction of the military target had been achieved.

Dr George Bell, Bishop of Chichester, made a stand against current bombing policy in the House of Lords on 9 February 1944, when he reminded the House that many actions taken during a war, and found acceptable, are supported by arguments that are readily demolished once the war has ended. He closed his speech asking:

How can they (the Cabinet) fail to realise that this is not the way to curb military aggression and end the war? . . . we who, with our Allies, are the liberators of Europe, should so use our power that it is always under the control of law.³¹

In March 1944 the Assistant Chief of the Air Staff (Intelligence), Air Vice-Marshall Inglis, produced a nine page paper concerning the effects of Allied attacks on German morale covering the period 1 November 1943 to 1 March 1944. A major focus was the fifteen heavy (and costly) attacks on Berlin over the winter months. The lack of unity in the views expressed by Nazi Party officials and individuals, the paper intimated, made it extremely difficult to forecast the possible course of events. The summation was that, although German morale had been reduced,

It is unlikely that active opposition will develop as a major threat to the Home Front. While the possibility of a sudden overthrow from below cannot be excluded, the evidence at present available favours the view that the process will be one of gradual disintegration on the Home Front. The decline of civilian morale, while most important, would thus not be the direct cause of a German collapse.³²

On 5 July 1944, at a meeting of the British Chiefs of Staff, German morale was considered from a different perspective. It was their opinion that “the time might well come in the not too distant future when an all-out attack by every means at our disposal on German civilian morale might be decisive.”³³ Their recommendation to the Prime Minister was that the method to be employed for such an attack should be considered and preparations made.

The Air Staff responded with a wide-ranging but unsigned paper. Berlin, they suggested, would provide a suitable target for a massive attack with the aiming point the heart of the Government quarter. In their opinion

Berlin is in the strictest sense a military objective and we should be fully justified in attacking it in the manner suggested, particularly in view of the German attitude in relation to their Flying Bomb attacks on London. Furthermore, there is every chance that a considerable direct moral effect would be produced in such circumstances on the German Government.³⁴

Although the Air Staff's deliberations covered the strafing of civilian targets or attacks on smaller towns of 20,000 inhabitants, they finally agreed that Berlin would be the ideal target for a massive air assault. Even in conditions of total cloud cover it could still be hit using radar, and it was the centre of government,

communications, and administration. The comparative failure of the winter offensive against Berlin was ignored because, although 48,000 tons of bombs had been dropped over a considerable period,

Many of the attacks have however been aimed at specific objectives on the outskirts of the city and much more concentrated destruction could have been achieved if an aiming point in the heart of the 'Government quarter' had been chosen.³⁵

The proposed operation was to be called *Thunderclap* and as originally perceived was not intended to either significantly reduce industrial output or create total chaos in the German social structure. The bombing, as defined in the Air Staff paper, was aimed at influencing "the minds of high German political and military authorities to propose organised surrender rather than a prolongation of the war."³⁶ In other words it was designed to bring about an organised surrender by a display of Allied air power that left no other option.

In a reasoned paper on 1 August 1944,³⁷ Bufton, the supreme champion in calling for a return to precision bombing, showed that he was not going to be caught up in any hysterical call for an attack on morale. Although it is possible he had been involved with earlier papers prepared for the Air Staff on the question, none have been located. In this latest paper he examined the principles to be followed to gain the maximum effect on German civilian morale by a concentrated bombing attack. He admitted that except in cases such as Hamburg in July 1943, when exceptional meteorological conditions pertained,³⁸ overall bombing effects on German civilian morale had been disappointing. He reasoned that

to provoke a state of terror by air attack, the attack, when launched, must be of such density that there is created in the mind of the individual the conviction that if he is in the area to be attacked his chances of escaping death or serious injury are remote.³⁹

He warned, however, that to increase the high explosive content of bomb loads at the expense of incendiaries, risked falling between two stools. Material destruction would be reduced and the density of attack so attenuated that the risk of death to individuals on the ground would be so lowered that the attack would fail to produce any significant impact on morale. In order to have an impact on morale

it was essential, he argued, that it was made only when “conditions are favourable. The attack should be launched at maximum intensity, on a short term basis, in the manner best calculated to affect morale.”⁴⁰

Berlin, Bufton agreed, provided the ideal target. It possessed the political and traditional associations, had a large working population drawn from all regions of Germany, and was the premier headquarters for the *Wehrmacht*. However, he cautioned, *Thunderclap* should not be launched until

The state of morale in Germany is considered to have deteriorated sufficiently; or when the need for retaliation demands. The effectiveness of such an attack might be increased by bringing in the 15th Air Force [and] Following it up at night with an all incendiary attack by Bomber Command, on the heaviest scale, on the remainder of the city.⁴¹

Bufton’s inclusion of the 15th Air Force in the proposed *Thunderclap* operation is somewhat surprising because, while they continued to operate from bases near Foggia, Berlin was outside their range. However, in a note to Bottomley on 22 January 1945 he indicated that “The attack on Berlin by U.K. based bombers might be supplemented by a simultaneous attack from the Mediterranean on Breslau or Munich.”⁴²

Late in August 1944, with the strategic bomber forces still operating under the authority of Eisenhower and Tedder, Bufton, who apparently had had a change of mind, again broached the subject of Operation *Thunderclap*. Its main purpose, he affirmed, was to

precipitate the capitulation of the German High Command. If the operation should succeed in curtailing the duration of the war by even a few weeks it would save many thousands of Allied casualties and would justify itself many times over.⁴³

Thunderclap, Bufton confirmed, aimed at the total destruction of the administrative and government centre of the German capital. The calls for revenge occasioned by the flying bomb attacks were forgotten; the Allied armies were building up even if apparently stalled; and Montgomery was preparing for Operation *Market Garden*.⁴⁴ Notwithstanding Bufton’s enthusiasm, *Thunderclap* was temporarily shelved. Perhaps the moment had been missed. Who knows

what might have happened had *Thunderclap* taken place on 20 July 1944, at the time of Hitler's attempted assassination?

Buften's apparent sudden conversion to the support of *Thunderclap* was a significant departure from his long-held view that the destruction of precision targets was the path to victory. Unfortunately, no material has been located that provides any convincing reason for his change of mind. Morley, perhaps provides two reasons in a letter he wrote in October 1944. As a postscript, he had admitted,

You will no doubt be surprised to hear Sydney B and myself proposing area bombing, but we believe the stage if [sic] set 'just right.' Things are bad inside Germany and we are proposing true morale bombing, that is 2,000 tons of H.E. per square mile not 100 to 200 tons as of old containing 50% of more of incendiaries . . . If we do not win this war in the next 60 or so days trying to get oil down, in the winter, we may be faced with a considerably stronger G.A.F. next Spring!⁴⁵

Perhaps Buften, late in 1944, had come to believe that the Allies now possessed the bomber strength capable of delivering the blow envisaged by Portal in his Note of 3 November 1942. In this Note Portal had described the destruction and death that he believed a heavy bomber force of between 4,000 and 6,000 heavy bombers could create to Germany and its people.⁴⁶ Terraine, in *The Right of the Line*, was severely critical of what he described as the "fearful proof of faulty Intelligence and wishful thinking to misguided strategy. . . . One thing emerges with absolute clarity: this was a prescription for massacre, nothing more nothing less."⁴⁷

Buften, in a letter to a friend in 1987, was equally critical of what he believed was Terraine's misinterpretation of Portal's Note. He argued that

the intention was to use the force in the attack of specific precision targets . . . the Pathfinder Force had been formed just over two months earlier with that in mind. However, to convince the Chiefs of Staff, the arguments used in Portal's paper had to be virtually unassailable as to fact . . . The projected effects on Germany of a 4,000-6,000 bomber force was a mathematical scaling-up on a bomb tonnage basis. It was never the intention to bash houses and kill civilians, but knock out key industrial targets . . . I know because I wrote the paper!⁴⁸

Another possible reason for Bufton's apparent conversion is that by late autumn 1944 there was widespread fear that should Germany survive the winter, victory might be harder to achieve in the spring and summer of 1945 than appeared possible in October 1944. Thus, in order to prevent Germany's survival, any plan that offered the possibility of early victory warranted close examination. His conversion displays the flexibility he possessed with regard to the best ways of conducting the bomber war — he was adaptable.

Another indication that perhaps Bufton was not wedded firmly to any belief in Operation *Thunderclap* is that although there was discussion at the second meeting of the C.S.T.C. concerning the preparation of a "plan under which the Strategic Bomber Forces could best contribute to ending the war within 60 days,"⁴⁹ the subject was not discussed in any of the next twenty-six meetings. Bufton's opinion expressed at this second meeting was that the

continued and indeed intensified attacks on oil targets would prove by far the most effective way in which the Strategic Bomber Forces could contribute to breaking German resistance within the next few months.⁵⁰

American support for *Thunderclap* can best be described as ambivalent. In August 1941 when drawing up Air War Plan Division Number One (AWPD/1), Spaatz, Arnold, George C Marshall (the US Army Chief of Staff), Henry L Stimson (Secretary of War), and President Roosevelt, unanimously approved a bombing programme which had, as fifth priority, area attacks on urban districts in German cities. Admittedly there was a proviso. This was that "Only when the industrial fabric of Germany began to crack should the AAF turn to area bombing of cities for morale purposes."⁵¹ The term 'area bombing' later became anathema to several American bomber commanders. Arnold, for one, aware of American public opinion following the second Schweinfurt attack, approved bombing through cloud using H₂X (the American equivalent of the British H₂S). It amounted to approving area attacks but he insisted that they be described employing such euphemistic terms as 'overcast bombing technique' or, 'bombing through overcast.'⁵²

Eisenhower, perhaps more *au fait* with the requirements of total war, displayed greater understanding. He admitted that he was prepared "to take part in anything that gives real promise to end the war quickly."⁵³ He also offered

Spaatz a limited promise by asserting that “The policies under which you are now operating will be unchanged unless in my opinion an opportunity arises where a sudden and devastating blow may have an incalculable effect.”⁵⁴ Eisenhower, however, was flexible. Early in September 1944 he instructed Spaatz to have Major General James Doolittle, the Eighth Air Force Commander, prepare his force for an indiscriminate attack on Berlin when ordered. No recognisable opportunity would have appeared to have arisen so perhaps this latest instruction from Eisenhower was an expression of his concern at the stalemate that appeared to have developed on the Western Front.

Senior American Air Force officers in Europe including General Laurence Kuter, the USAAF Assistant Chief of Air Plans, and Generals Spaatz and Eaker, together with General H H Arnold in Washington, all went to considerable lengths to avoid being coupled with Bomber Command in area attacks. They hoped that their protestations of attacking military, rather than civilian targets, would receive wide commendation. Their claims, however, all too often differed widely from their practice. American bombing was also carried out by units — when the formation leader released his bombs, the group he was leading released theirs. As a consequence their bomb distribution was widespread, unlike Bomber Command where each bomb load was aimed individually. In Europe, the frequent American H2X attacks on targets identified as communications centres were, in reality, area bombing of German cities and were significantly less accurate than the blind bombing carried out by Bomber Command. Likewise, in the Pacific theatre, General Curtiss LeMay waged a remorseless area bombing campaign against Japanese cities, totally ignoring his radical departure, at least from American European doctrine. He pulled no punches. Of one attack, he noted, “If the war is shortened by a single day, the attack will have served its purpose.”⁵⁵

As a result of the unwillingness of the Americans to participate in *Thunderclap* — denounced as “terroristic” by the Psychological Warfare Division of SHAEF⁵⁶ — coupled with the disagreements between the Air Staff and Harris, a slight blurring appears to have developed between *Thunderclap* and another operation under consideration, *Hurricane*. This latter operation was not developed with the intention of providing a final, shattering blow to German morale. The purpose was rather to select a vital German target system and then employ the maximum effort of the Strategic Bomber Forces to deliver a massive

blow. It was to be a display of Allied air power. Morale, despite the obvious linkage, was but an incidental target.

Under the terms of the Directive issued to Spaatz and Harris on 25 September 1944, the German petroleum industry had been accorded first priority. In second priority were the German rail and water transport systems, tank production plants, and motor transport production plants and depots. Harris had operated under similar Directives previously but remained aware that he had been provided every opportunity to continue his assault against German cities and their inhabitants.

On 30 September 1944 Bufton chaired a meeting to consider the immediate employment of Allied Air Forces in Operation *Hurricane*. Although it was generally agreed at the meeting that oil provided the best target system, the American representatives and their British counterparts differed as to how it should be attacked. The Americans were anxious to spread attacks across Germany, while Bufton, in particular, wanted both Commands to concentrate on Ruhr oil targets. In his summation, Bufton suggested that “the Ruhr appeared to be the only place where the concentration in time and space required for the proposed operation could be effected.”⁵⁷ It was agreed that the Americans would attack Ruhr oil plants while Bomber Command concentrated on “selected fully built-up areas in the Ruhr cities which had not as yet been appreciably damaged.”⁵⁸ The aim was to display to the enemy the massive air power that the Allies now possessed. Enemy morale, clearly, was still considered to be a target.

Harris, however, who had not participated in the 30 September meeting, had no desire for his bombers to return to the Ruhr. As far as he was concerned the Ruhr was no longer a target as its cities were included among the forty-five that he described as having been destroyed. He admitted that, because of diversions during the previous six months, some necessary but others avoidable, the German cities had been granted considerable breathing space. Now is the time, he advised Churchill, that “We should . . . get on and knock Germany finally flat. For the first time we have the force to do it. Opportunities do not last for ever and this one is slipping.”⁵⁹

Churchill agreed with what he described as Harris’s “very good letter” and declared that he was “all for cracking everything in now on to Germany that can be spared from the battlefields.”⁶⁰

Inglis, however, was opposed to any operation directed at German morale. His argument was that even further weakening of enemy morale would not necessarily lead to a shortening of the war. He did agree, however, that an attack on the Ruhr would intensify German administrative problems. He expressed one reservation. Because of damage already created, and the industrial dispersal that had occurred, he was not entirely convinced that the Ruhr still formed an important part of the German industrial machine. His final point was that further area bombing could create political problems in the post-war era. He even envisaged the majority of Germans possibly preferring the Russians, who had not bombed them, to the Allies, who had!⁶¹

This latter suggestion, and the possible consequences, were rejected by Bufton who asserted that he was not empowered to argue policy taking into account the post-war effects of any operation. He observed that it was somewhat late in the day to have to consider German attitudes regarding strategic bombing. Operation *Hurricane*, he noted, was to focus Bomber Command's attention on one specific area, employing high explosive bombs rather than incendiaries, but was not otherwise attempting to establish any new form of area attack.⁶²

Early in October 1944, Group Captain Morley, who had earlier worked with Bufton in the Directorate of Bomber Operations but was now with Tedder in SHAEF, wrote to one of his American opposite numbers. Morley confirmed that he supported concentrated bombing in the Ruhr area. It was, he claimed, preferable to dispersal of effort. Conditions in Germany are bad, he continued, and we are hoping to make them worse. This latest proposition, he argued, was true morale bombing. "We are" he concluded, "out for short not long term effect and we must concentrate our mighty combined air strength and superiority in SPACE as well as TIME."⁶³

On 13 October 1944 a Directive was issued to Harris, Spaatz, and Tedder, outlining special operations *Hurricane I* and *Hurricane II*. The first called for a maximum effort assault, in visual conditions, by British and American bombers against objectives in the densely populated Ruhr. *Hurricane II* provided for maximum effort assaults, again in visual conditions, against precision targets – oil was specified – in Germany. Both operations were designed to "demonstrate to the enemy in Germany generally the overwhelming superiority of the Allied Air

Forces in this theatre.”⁶⁴ As such, they were clearly designed to be attempts to reduce German morale.

According to Robin Neillands, Operation *Hurricane* was first implemented on 14 October 1944 in a heavy daylight attack on Duisburg by RAF Bomber Command.⁶⁵ However, it is now impossible to differentiate this attack from all the other area attacks carried out by Bomber Command against German cities at this stage of the war. It certainly did not fit the criteria as set out in the Directive for Operation *Hurricane* as the Americans did not participate, neither was the raid in visual conditions.⁶⁶ Another RAF historian noted that this attack “most closely resembled” the planned *Hurricane* attacks, but went no further.⁶⁷ Later in October Operation *Hurricane* joined *Thunderclap* on the shelf, but neither was completely forgotten.

With the war continuing into 1945, and following the failure of the German Ardennes offensive combined with Russian successes on the Eastern Front, it appeared to some an opportune time to reconsider the possibility of implementing *Thunderclap*. Morley, at Tedder’s Headquarters, was among the first. In January he called for an immediate reconsideration of the plan. “That this operation is an attack on enemy morale” he observed, “needs no apology.”⁶⁸

The following day Bufton made the same appeal to Bottomley. In forwarding the *Thunderclap* file to the DCAS, he suggested that with the Russian advance showing no signs of losing momentum, the launching of such an attack would at least provide the appearance that there was an integrated plan for both Eastern and Western Fronts. There was a strong chance, he argued, that

if the operation were launched at a time when there was still no obvious slackening in the momentum of the Russian drive, it might well have the appearance of a closer coordination in planning between the Russians and ourselves.⁶⁹

Were the German authorities to accept such an inference, Bufton asserted, a heavy attack on Berlin, supplemented by attacks on Breslau and Munich from Mediterranean based bombers, “would greatly increase the moral effect of both operations.”⁷⁰ His argument was that any delay, or should the Russian advance lose its impetus, or should the Germans stabilise the front, would mean missing the psychological moment.

Buften, as the alternate chairman of the C.S.T.C., was ideally placed to pursue the question of either *Hurricane* or *Thunderclap* at their regular meetings, but apparently declined the opportunity. Instead, as noted earlier, in the following twenty-six meetings, concentration was centred largely on the targets nominated in the current Directive.

Portal, perhaps somewhat overborne by the forthcoming Yalta Conference, responded negatively. The moon, he pointed out, was in the wrong phase, and it would therefore be necessary to wait for darker nights. Moreover, the winter weather conditions made it unlikely that the bomber forces would be granted four nights in quick succession to carry out effective attacks. "It is certainly not worth while" he argued, "to undertake large scale bombing of communications in the hope of delaying the West-East passage of German reinforcements to the Eastern Front."⁷¹ But, he added, subject to the proviso that oil and other agreed target systems were not neglected, a big attack should be carried out against Berlin, accompanied by attacks on Dresden, Leipzig, and Chemnitz. Additional attacks, he continued, should also be carried against "any other cities where a severe blitz will not only cause confusion in the evacuation from the East but will also hamper the movement of troops from the West."⁷²

Early in 1945, Portal, of course, was operating under considerable strain. Harris was riding one of his favourite hobby horses and a lengthy, and at times acrimonious, correspondence between himself and the CAS was under way. Oil was the prime topic, but Harris was also arguing that he should have a greater say in determining bombing policy.⁷³ On this occasion he received short shrift from Portal who concluded, "I feel it would be quite inappropriate and indeed impracticable for you to be consulted directly in the examination of individual targets."⁷⁴

The British Joint Intelligence Committee supported Buften's view that this was the appropriate moment to implement *Thunderclap*. Their acceptance of the operation was not because they believed that it would have any direct bearing on German morale, but rather because it would considerably assist the Russian offensive. They saw it as creating confusion, interfering with reinforcement of the Eastern Front, and confounding both the German military and administrative machinery. As the attack on Berlin is to be "primarily for morale and psychological

effect it is important that it should be delivered with that aim in mind and not spread amongst the outlying suburbs.”⁷⁵

On receipt of Portal's note of 26 January 1945 suggesting heavy attacks on Berlin and other cities in Eastern Germany, Bottomley, who was acting CAS in Portal's absence, telephoned Harris. The latter confirmed that a heavy attack on Berlin was planned once the moon had waned and also offered no objection to his bomber force undertaking operations against Eastern German cities because, up until now, they had been little affected by his area bombing campaign. Chemnitz, Leipzig and Dresden were seen as legitimate communication targets. Attacks on them would also create administrative problems because these cities were all trying to come to terms with an enormous influx of refugees from both east and west.

Despite Bomber Command having at least temporarily drawn back from an immediate *Thunderclap*-weight assault on Berlin, the Americans continued with their planning. Their motives have never been clearly explained. Certainly there had been pressure from the Army Chief of Staff, General George Marshall, but perhaps it was the desire to display to the Russians the enormous air power that America now possessed. Alternatively, it could have been in response to some oblique call from the Russians to provide an effective diversion to remove pressure from the hard-pressed Russian forces. Perhaps, also, some consideration may have been given to possible post-war problems and the need to display to Russia that America was not a force to be ignored in the future.

On 30 January 1945 Doolittle, the Eighth Air Force Commander, advised Spaatz that his force was prepared for Operation *Thunderclap*. Spaatz, who had earlier opposed *Thunderclap*, had now become, in the case of Berlin, a fervent supporter.⁷⁶ Doolittle was the one now questioning the need to bomb a city where there were no military targets in the vicinity of the nominated aiming point — the city centre. He reminded Spaatz that “The chances of terrorizing into submission, by merely an increased concentration of bombing, a people who have been subjected to intense bombing for four years is extremely remote.”⁷⁷ Spaatz remained adamant and instructed Doolittle that Berlin was to be attacked “whenever conditions do not repeat not indicate possibility of visual bombing of oil targets.”⁷⁸

Spaatz's motives have never been clearly defined. He sought publicity for the *Thunderclap* attack on Berlin and stressed the need to display that it was an effort to disrupt the flow of reinforcements to the Russian Front as well as increase administration confusion in Berlin. Nevertheless, it might, in Spaatz's mind, have had an element of an attack on morale because, despite Doolittle's request to be allowed to attack important rail targets in Berlin, Spaatz had insisted that the centre of Berlin was the aiming point. Perhaps he still harboured at least a slight belief that the American Air Force could carry out a *coup de main* sufficient to create conditions in Berlin where the authorities believed that there was no option but to surrender.

Berlin was attacked on 3 February 1945 by more than 1,000 American heavy bombers and the centre of the city was bombed using visual methods. Bomber Command provided no follow-up.

In the meantime Churchill had again become involved in the bombing question. His concerns may have been both military and political. Politically, he may have considered it desirable to display to Stalin, at Yalta, the strength of the Anglo-Russian alliance. On the other hand, he may have wanted the Russian leader to be fully aware of the enormous capability of Allied air power. On 25 January 1945 he had a discussion with Sinclair, the Secretary of State for Air. Sinclair's understanding was that he had been asked what air plans had been made to harass the Germans in their retreat from Breslau. His response to Churchill, following a discussion with Portal, was cautious. He concluded: "the possibility of these attacks being delivered on the scale necessary to have a critical effect on the situation in Eastern Germany is now under examination."⁷⁹

Churchill's response, the same day, was sharp and to the point. He protested:

I did not ask you last night about plans for harrying the German retreat from Breslau. On the contrary, I asked whether Berlin, and no doubt other large cities in East Germany, should not now be considered especially attractive targets. I am glad this is 'under examination.' Pray report to me tomorrow what is going to be done.⁸⁰

In reply, the next day, Sinclair assured Churchill that every effort would be directed against Berlin, Dresden, Chemnitz, and Leipzig, "subject to the overriding

claims of attacks on enemy oil production and other approved target systems within the current directive.”⁸¹ Harris, he concluded, “has undertaken to attempt this task as soon as the present moon has waned and favourable weather conditions allow.”⁸² Bottomley contacted Harris the same day. He reminded Harris of their telephone conversation the previous day relating to the projected attacks on industrial areas in eastern German cities. He informed Harris that Portal was opposed to an attack on Berlin on a *Thunderclap* scale, because he doubted that it would be successful. Instead, Harris was advised that he was to carry out

one big attack on Berlin and related attacks on Dresden, Leipzig, Chemnitz or any other cities where a severe blitz will not only cause confusion in the evacuation from the East but will also hamper the movement of troops from the West.”⁸³

In effect, this was a direct order to Harris. The Directive under which he was then operating, Directive No 3 for the Strategic Air Forces in Europe, dated 15 January 1945, simply stated that oil was the first priority, and communications the second.⁸⁴ Should weather prevent attacks on these targets, then attacks were to be delivered against industrial areas, employing blind bombing techniques, if necessary.

On 31 January 1945 Bottomley advised Portal, who was then in Malta preparing for the Yalta Conference, of the decisions made. The preamble to his signal is interesting because it could be interpreted that responsibility for the decisions was being side-stepped. “You will wish to know” Bottomley advised, “that following your talk with Spaatz and myself and as a result of discussions with Tedder, we have arrived at the following order of priorities for Strategic Air Forces to meet the present situation.”⁸⁵ The generic ‘we’ employed by Bottomley was not identified.

The other point of note in this signal is that it also varied the target priority order. While oil remained first, Berlin and two or three cities in east Germany, including Dresden, had moved to second priority. Communications were now third. With regard to Berlin and eastern German cities, the requirement was for heavy attacks which “will cause great confusion in civilian evacuation from the

East and hamper movement of reinforcements from other fronts.”⁸⁶ The enigmatic ending to this sub-paragraph, had a sombre ring: “You know the intentions of Bomber Command.”⁸⁷ Clearly, enemy morale remained firmly in many British sights; it offered, they believed, a way to bring the war to an end. Meanwhile, the Americans continued to be somewhat ambivalent.

On the night of 13/14 February 1945, Dresden was attacked by 796 Lancasters and nine Mosquitoes. The next day, the railway marshalling yards in Dresden were attacked by 461 B-17s of the American Air Force. These two attacks have often been misinterpreted as being part of Operation *Thunderclap*. They were not. For the Royal Air Force it was simply a continuation of the area bombing programme, long accepted and encouraged by the Government, Service chiefs, and the general public. It was also a positive response to the demands of Churchill himself, who had specified eastern German cities as targets worthy of Bomber Command’s attention. The forces of nature combined again on this occasion, as they had at Hamburg, and a fire storm engulfed Dresden creating casualties that remain a debating point. Churchill speedily removed himself from the developing and on-going controversy.

No further official correspondence has been located referring to attacks on German civilian morale dated after the Dresden raid. There was, however, very considerable analysis, criticism, and commentary, relating to the attack, which has been on-going.⁸⁸ Churchill, on 28 March 1945, his political hat now firmly in place, issued possibly his “least felicitous”⁸⁹ Personal Telegram of the entire war. Addressed to General Ismay for the Chiefs of Staff Committee, and Portal, it declared:

the moment has come when the question of bombing German cities simply for the sake of increasing the terror, though under other pretexts, should be reviewedThe destruction of Dresden remains a serious query against the conduct of Allied bombing. I am of the opinion that military objectives must henceforward be more strictly studied in our own interests rather than that of the enemy.⁹⁰

Oil and communications targets, he concluded, required greater attention rather than “mere acts of terror and wanton destruction, however impressive.”⁹¹

Bottomley contacted Harris the same day. Churchill’s note, he argued, misinterprets the purpose of our attacks on industrial areas in the past and appears to

ignore the aim given by the Combined Chiefs of Staff in their directives which have been blessed by the Heads of Governments.⁹²

Because the matter was to be considered by the COS, and the Defence Committee, the next week, Harris's views were requested. Although he had not seen the telegram, Harris was not impressed. The quoted passages were, he protested,

abusive in effect, though doubtless not in intention . . . to speak of our offensive as including 'mere acts of terror and wanton destruction' is an insult both to the bombing policy of the Air Ministry and to the manner in which that policy has been executed by Bomber Command. This sort of thing if it deserves an answer will certainly receive none from me, after three years of implementing official policy.⁹³

Despite his disclaimer, Harris then continued, for just over three pages, to justify his actions. His Directive, he insisted, could only be carried out by the destruction of industrial cities. He cited five letters confirming his interpretation of his Directive:

We have never gone in for terror bombing and the attacks which we have made in accordance with my Directive have in fact produced the strategic consequences for which they were designed and from which the Armies now profit.⁹⁴

Have we now completed our task, he asked? Until I am so informed, he warned, the strategic bombing of German cities will continue. What about Japan? "Are we going to bomb their cities flat" he questioned, "or are we going to bomb only outlying factories and subsequently invade at the cost of 3 to 6 million casualties? We should be careful of precedents."⁹⁵

On 29 March 1945, at a Staff Conference, Churchill agreed to withdraw his minute of the previous day. The Chief of Staff to the Ministry of Defence, Lieutenant- General Sir Hastings Ismay, was instructed to redraft the minute, "in less rough terms,"⁹⁶ for Churchill's consideration. On 1 April a revised version of Churchill's minute appeared. It was certainly couched in more acceptable terms. It concluded, "We must see to it that our attacks do not do more harm to ourselves in the long run than they do to the enemy's immediate war effort."⁹⁷

Later the same month, on 5 April, Portal and the Chiefs of Staff sent a message to Churchill, defining future policy. Bombing of industrial areas, simply to create destruction or disorganisation, would end, he was told. However, the current Directive, providing for area bombing, would remain unchanged. Churchill was advised that "Any ultimate political or economic disadvantages of area bombing necessitated by these operations should be accepted."⁹⁸ He initialled the paper, without comment.

The British attack on German morale was initially directed primarily against the German industrial labour force. Had they decided to lay down their tools or desert their work benches, then neither Hitler nor his enforcers could have done anything and the war for Germany would have been lost. Unfortunately, the British authorities who decided on an attack on German morale made two basic mistakes. They under-estimated the resilience of the German people, and they over-estimated the destructive capability of their bomber force.

During the Second World War aerial bombs were a much less discriminating weapon than they have since become. Unless total population evacuation had been accomplished in the German cities, it was inevitable that women and children would die. Their presence and their consequent deaths, whether deliberate or the incidental accompaniment to all-out war, was one element identified by Harris that would assist in attaining victory. His was not a unilateral decision. He had won Churchill's sustained support with his Operation *Millenium* in May 1942 but the Prime Minister, even then, had already cleared the way. In a radio broadcast earlier that month he informed the German people that the RAF intended to bomb every city in which vital industries supplying the German war machine were established. He warned the German people that their only escape was to "leave the cities where munition work is being carried on, abandon their work and go out into the fields and watch the home fires burning from a distance."⁹⁹ His inference was, keep working and you will be killed.

German morale was accepted by Harris as a viable and susceptible target. Thus Harris employed area bombing to attack the German national will perhaps rather more than the publicised reason — the destruction of the industrial and military complexes which provided the means of making war.

Harris was steadfast in his continuation of area bombing throughout the war and increasingly resented any attempt by what he called 'panacea mongers' to

divert either him or his aims. He also grew increasingly critical of what he called the Air Ministry's failure to publicly acknowledge what he claimed was the true aim of the area offensive. His letters to Street were both pungent and frequent. In December 1943, it will be recalled, Street had advised him that that public utterances were designed to not provoke public controversy and to avoid conflict with religious and humanitarian opinion.¹⁰⁰ As far as Harris was concerned this definition, for such a serious matter, clarified nothing. He made clear that German cities and everything and everybody in them who provided any assistance to the German war effort were targets for Bomber Command. He demanded that the truth, unpleasant as it may be to some, be told.¹⁰¹

As early as April 1942, it will be remembered, Harris had claimed that it would be necessary "to kill a lot of Boche before we win this war."¹⁰² Perhaps these were the parameters he employed when he launched his area attacks on Dresden on the night of 13/14 February 1945; Pforzheim on the night of 23/24 February 1945; and Würzburg on the night of 16/17 March 1945. With regard to Dresden, Harris never displayed any evidence of contrition. The outcry that eventually erupted, he believed,

could be easily explained by any psychiatrist. Actually Dresden was a mass of munition works, an intact government centre, and a key transportation point to the East. It is now none of those things.¹⁰³

He made no specific comments concerning either Pforzheim or Würzburg although one claim that in Pforzheim "almost every house was a small workshop engaged on war production"¹⁰⁴ was surely at least debatable. What were the people making, and where were the military units who required what had been made?

Post-war, Harris claimed one victory. "Bombing" he argued,

proved a comparatively humane method. For one thing it saved the flower of the youth of this country and of our allies from being mown down by the military in the field as it was in Flanders in the war of 1914-1918.¹⁰⁵

It must also be acknowledged that Harris's area campaign could never have been maintained without at least the tacit consent of both Portal and Churchill.

Harris was their chosen agent. Portal, at least by 1944, had recognised that Bomber Command had become a potent weapon, better and more productively employed provided Harris could be convinced that it was capable of delivering accurate and destructive precision attacks. Harris, however, remained unconvinced but Portal made no effort to replace him and this is a mark against his leadership abilities. Churchill was a longer-term supporter of the area bombing campaign but even he, in February 1945, recognised the error of Harris's way. His failure to acknowledge even a modicum of blame marks him as a lesser man.

The last major raid of the war on a German city was delivered against Potsdam on the night of 14/15 April. The aiming point was the city centre. However, the die had been cast. Bomber Command received no invitation to attend surrender ceremonies; Tedder went as Eisenhower's representative to Berlin, seen by Eisenhower as a largely Russian affair. Churchill sent a personal message of thanks to Harris at the end of the war, but Bomber Command received no word of praise during Churchill's victory speech; the efforts and sacrifices went unremarked. Perhaps it was an indication of the regret that Churchill, as Minister of Defence, above Portal and the other two Chiefs of Staff, now had about the long, bitter, and costly, strategic air offensive. It was an unworthy conclusion.

End Notes

¹ Hans Blix, 'Area Bombardment: Rules and Reasons,' in *British Year Book of International Law* 1978, (Oxford, 1979), p. 36.

² Stephen Possony, *Strategic Air Power*, (Washington D.C., 1949), p. 148.

³ *Ibid.*, p. 147.

⁴ Quoted in C.G.G., 'On the Ethics of Bombing,' *Aeroplane*, 8 February 1939, p. 159.

⁵ Jones, *The War in the Air*, Vol. VI, p. 111.

⁶ Webster and Frankland, Vol. IV, p. 73.

- ⁷ Dr E B Strauss, 'The Psychological Effects of Bombs,' in *JRUSI*, Vol.LXXXIV, No. 534, May 1939, p. 275.
- ⁸ E M Eddy, 'Britain and the Fear of Aerial Bombardment, 1935-1939,' in *Aerospace Historian*, Vol. 13, No. 4, p. 178.
- ⁹ C G Grey, 'Over and Over Again,' in *Aeroplane*, 9 February 1938, p. 159.
- ¹⁰ J M Spaight, *Airpower and War Rights*, (London, 1945), pages unnumbered.
- ¹¹ Bufton Papers, 3/10, 'Night Bombing Policy,' 25 August 1941, p. 2, para. 13.
- ¹² PRO AIR 19/186, 'Development and Employment of the Heavy Bomber Force,' 22 September 1941, p. 1, para. 2.
- ¹³ Bufton Papers, 3/47, Bottomley to Baldwin, 14 February 1942, p. 2, para. 5. Note: Harris replaced Baldwin eight days later.
- ¹⁴ In 1947 Harris admitted in *Bomber Offensive* that although the main aim of area industrial bombing had been "to break the enemy's morale," the concept had proved to be "totally unsound." Morale bombing, he admitted, "was comparatively ineffective against so well organised a police state as Germany." See pp. 78-9.
- ¹⁵ Tizard Papers, Cherwell to Prime Minister, 9 April 1942, paras. 4 and 5. The paper was actually written on 30 March 1942. For full details of this Paper and the disagreement that followed see Chapter Three.
- ¹⁶ PRO AIR 8/625, Harris to Portal, 5 March 1942, para. 1.
- ¹⁷ PRO AIR 41/42, C R Andrew, *The R A F in the Bombing Offensive Against Germany*, (London, 1950), Vol. IV, p. 163.
- ¹⁸ Bufton Papers, 3/47, Bottomley to Harris and Eaker, 10 June 1943, para. 5. The section approving attacks on the morale of the German people was finally omitted from the Directive issued on 17 February 1944. Blind area attacks however, continued to be approved, when weather conditions demanded. Harris, of course continued with area attacks regardless of Directives. See also Webster and Frankland, Vol. II, p. 84.
- ¹⁹ Bufton Papers, 3/47, Unsigned, 7 November 1943, p. 8, para. 26(i).
- ²⁰ *Ibid*, para. 26(iii).
- ²¹ PRO AIR 14/843, Harris to Under Secretary of State, 25 October 1943, p. 4, para. 8(a).
- ²² Richard G. Davis, *Carl A. Spaatz and the Air War in Europe*, (Washington D.C., 1993), p. 570.
- ²³ *Ibid.*, Street to Harris, 15 December 1943, p. 2, para. 6.
- ²⁴ *Ibid.*, Harris to Street, 23 December 1943, p. 2, para. 4. Underlining in the original.

- ²⁵ Ibid., p. 3, para. 6.
- ²⁶ Ibid., 25 February 1944, p. 1, para. 2. He did not amplify his claim to having “incontestable evidence” but referred to it as having come from “Most Secret sources,” presumably Ultra.
- ²⁷ F H Hinsley *et al*, *British Intelligence in the Second World War*, Vol. 3, Part 1, p. 306.
- ²⁸ PRO AIR 14/843, Street to Harris, 2 March 1944, p. 1, para. 6.
- ²⁹ Ibid., para. 7.
- ³⁰ Ibid., Harris to Street, 7 March 1944, paras. 1, 2 and 3.
- ³¹ Geoffrey Best, ‘The Bishop and the Bomber,’ in *History Today*, Vol. 33, September 1983, p. 32.
- ³² PRO AIR 14/843, ‘Allied Air Attacks and German Morale,’ 11 March 1944, p.9, paras. 13 (iii and iv).
- ³³ PRO AIR 20/4831, ‘Attack on German Civilian Morale,’ 17 July 1944, p. 1, para. 1.
- ³⁴ Ibid., p. 5, para. 9(iv).
- ³⁵ Ibid.
- ³⁶ PRO AIR 20/4831, Air Staff Note, 17 July 1944, p. 2, para. 5.
- ³⁷ PRO AIR 20/4831, Bufton, ‘Operation *Thunderclap*,’ 1 August 1944, p. 1, para. 2(i).
- ³⁸ Martin Middlebrook, *The Battle of Hamburg*, (London, 1980), p. 259, has provided the meteorological details.
- ³⁹ PRO AIR 20/4831, Bufton, ‘Operation *Thunderclap*,’ 1 August 1944, pp. 2 and 3, para. 6.
- ⁴⁰ Ibid., pp. 4 and 5, para. 11.
- ⁴¹ Ibid., p. 6, paras. 15 and 16. Berlin, of course, was beyond the range of the Fifteenth Air Force operating from Italian bases.
- ⁴² PRO AIR 20/4831, *Operation ‘Thunderclap*,’ Bufton to Bottomley, 22 January 1945, para. 4.
- ⁴³ Bufton Papers, 3/47, ‘Operation *Thunderclap*,’ 20 August 1944, p. 1, para. 1.
- ⁴⁴ Operation *Market Garden*: Montgomery’s plan to bring the war to an early end by breaking through at Arnhem and then advancing into Germany.
- ⁴⁵ Bufton Papers, 3/45, Morley to Major D T Selko, 9 October 1944, p. 3, underlining in the original.

- ⁴⁶ Webster and Frankland, Vol. IV, Appendix 20, pp. 249-264.
- ⁴⁷ Terraine, *The Right of the Line*, pp. 506-7.
- ⁴⁸ Bufton Family Archives, Bufton to John Morgan, 10 June 1987.
- ⁴⁹ PRO AIR 40/1269, Minutes of the Second Meeting of the Combined Strategic Target Committee, 25 October 1944.
- ⁵⁰ Ibid., p. 1, para. 1.
- ⁵¹ Craven and Cate, *The Army Air Forces in World War II*, Vol. I, p. 599.
- ⁵² Biddle, *Rhetoric and Reality in Air Warfare*, p. 228.
- ⁵³ Richard G Davis, 'Operation 'Thunderclap' : The US Army Air Forces and the Bombing of Berlin,' in *Journal of Strategic Studies*, Vol. 14, No. 1, March 1991, p. 97.
- ⁵⁴ Ibid.
- ⁵⁵ Biddle, p. 268. See also, Conrad C Crane, *Bombs, Cities and Civilians*, (Lawrence, 1993), Chapter 9, 'Torching Japan,' pp. 120-142.
- ⁵⁶ Craven and Cate, Vol. III, 16 September 1944, p. 639.
- ⁵⁷ Bufton Papers, 3/45, 'Minutes of Meeting of Combined Planning Staffs to Discuss the Immediate Employment of Allied Air Forces and Operation *Hurricane*,' 1 October 1944, p. 4, para. 14.
- ⁵⁸ Ibid., para. 15.
- ⁵⁹ Harris Papers, H65, 59, Harris to Prime Minister, 30 September 1944, p. 3.
- ⁶⁰ Ibid., 60, Prime Minister to Harris , M986/4, 1 October 1944.
- ⁶¹ Bufton Papers 3/47, 7 October 1944, p. 3, para. 5.
- ⁶² Ibid., p. 4, para. 5
- ⁶³ Bufton Papers 3/45, Morley to Major D T Selko, 9 October 1944, p. 3. Underlining and capitals as in the original
- ⁶⁴ Bufton Papers 3/47, 'Operations Hurricane I and Hurricane II,' 13 October 1944, para.1.
- ⁶⁵ Neillands, *The Bomber War*, p. 340.
- ⁶⁶ Roger A Freeman, *Mighty Eighth War Diary*, (London, 1981), p. 364.
- ⁶⁷ PRO AIR 41/56, Hartcup, *The RAF in the Bombing Offensive Against Germany*, Vol. VI, p. 132. During these two raids on Duisburg, Bomber Command dropped 9,200 tons of bombs. During the entire *Blitz* on London, the *Luftwaffe* released less than

10,000 tons. See PRO AIR 14/3453, *Bomber Command Quarterly Review*, (London, 1944), No. 11, October – December 1944, p. 4.

⁶⁸ Bufton Papers, 3/47, 'Operation *Thunderclap*,' Morley, 21 January 1945, para. 5.

⁶⁹ PRO AIR 20/4831, Bufton to Bottomley, 22 January 1945, para. 2.

⁷⁰ *Ibid.*

⁷¹ PRO AIR 20/3361, Portal to Bottomley, 26 January 1945, para. 2(B).

⁷² *Ibid.*, para. 2(f).

⁷³ Portal Papers, File 10, 1945, 3(d), Harris to Portal, 24 January 1945, p. 1, para. 2.

⁷⁴ PRO AIR 8/1020, Portal to Harris, 25 January 1945, p. 1, para. 3.

⁷⁵ PRO AIR 20/3361, Air Staff Note, 'Strategic bombing in Relation to the Present Russian Offensive,' 26 January 1945, p. 3, para. 7.

⁷⁶ Spaatz always claimed that his bombers only attacked military targets. However, in 1969, he admitted that in the case of Berlin, he made an exception. Richard G Davis, *Carl A Spaatz and the Air War in Europe*, (Washington, 1993), p. 551.

⁷⁷ Davis, 'Operation *Thunderclap*,' in *Journal of Strategic Studies*, Vol. 14, No. 1, March 1991, p. 103.

⁷⁸ *Ibid.*, p. 104.

⁷⁹ Webster and Frankland, Sinclair to Prime Minister, 26 January 1945, Vol. III, p. 102.

⁸⁰ PRO PREM 3/12, Churchill to Sinclair, 26 January 1945.

⁸¹ PRO AIR 20/ 3361, Sinclair to Prime Minister, 27 January 1945, para. 1.

⁸² *Ibid.*, para. 2.

⁸³ *Ibid.*, Bottomley to Harris, 27 January 1945, para. 2.

⁸⁴ Bufton Papers, 3/47, 15 January 1945, p. 1, para. 2.

⁸⁵ PRO AIR 20/3361, Bottomley to Portal, 31 January 1945, para. 1.

⁸⁶ *Ibid.*, para. (2B).

⁸⁷ *Ibid.*,

⁸⁸ See Joseph W Angell, *Historical Analysis of the 14-15 February 1945 Bombing of Dresden*, (Bolling AFB, 1953) ; Alan Cooper, *Target Dresden*, (Bromley, 1995); David Irving, *The Destruction of Dresden*, (London, 1963);); David Irving, *Apocalypse 1945 The Destruction of Dresden*, (Maryborough[Australia], 1995); Alexander McKee, *Dresden 1945: the Devil's Tinderbox*, (London, 1982; Lewis F Powell Papers, USAF

Historical Research Centre, (Maxwell AFB, 1978); Melden E Smith, "The Bombing of Dresden Reconsidered: A Study in Wartime Decision Making," Ph. D Thesis (Boston University, 1971); Frederick Taylor, *Dresden Tuesday 13 February 1945*, (London, 2004);

⁸⁹ Webster and Frankland, Vol. III, p. 112.

⁹⁰ PRO PREM 3/12, Prime Minister's Personal Telegram, D.83/5, 28 March 1945, para. 1.

⁹¹ Ibid., para. 2.

⁹² Harris Papers, H9, Bottomley to Harris, 28 March 1945, paras. 3 and 5.

⁹³ Ibid., Harris to Bottomley, 29 March 1945, paras. 1 and 2.

⁹⁴ Ibid., p. 2, para. 7.

⁹⁵ Ibid., p. 4.

⁹⁶ PRO PREM 3/12, Ismay to Prime Minister, 30 March 1945, para. 1.

⁹⁷ Ibid., Prime Minister's Personal Minute D.89/5, 1 April 1945.

⁹⁸ Ibid., Hollis to Prime Minister, 5 April 1945, p. 1, para. 2(d).

⁹⁹ Spaight, 'Morale as Objective,' in *Royal Air Force Quarterly*, Vol. 3, No. 4, 1951, p. 290.

¹⁰⁰ PRO AIR 14/843, Street to Harris, 15 December 1943, p. 2, para. 6.

¹⁰¹ Ibid., Harris to Street, 23 December 1943, p. 3, para. 6.

¹⁰² Bufton Papers, 3/11, Harris to Baker, 11 April 1942, para. 2.

¹⁰³ Harris Papers, H9, Harris to Bottomley, 29 March 1945.

¹⁰⁴ PRO AIR 14/3454, *Bomber Command Review*, No. 14, 1945, subscription to fig. 4.

¹⁰⁵ Harris, *Bomber Offensive*, p. 176.

Chapter Nine

Conclusions

It has been argued in this thesis that disagreements between the Air Staff and Harris meant that much of the enormous power available to Bomber Command by 1944 was misapplied and, as a consequence, the war was prolonged into 1945. Although many of the organisational and equipment deficiencies which had plagued the Command until early 1942 had diminished by the time of Harris's assumption of authority in February of that year, many difficulties still remained: heavy bomber shortages was but one. Nevertheless, although that particular handicap had also largely been overcome by 1944, European weather conditions continued throughout the war to place restrictions on bombing operations and frequently determined the targets that could be attacked. As Harris made clear, what may have been operationally desirable was not always tactically possible. But, even so, by 1944 any remaining organisational and equipment deficiencies were largely subordinated by the differences that had arisen between the Air Staff and Harris, which Portal had allowed to develop, relating to bombing policy. Harris's inflexibility coupled with his inability or unwillingness to critically examine the aims and results of his self-determined area bombing programme, in combination with Portal's failure to exert his authority, meant that Bomber Command implemented the bombing policy largely decided by Harris rather than that required by the Air Staff.

It was this unwarranted dominance that Air Commodore Bufton fought so hard to overcome. His battles with Harris over bomb loads, the Path Finder Force, Schweinfurt, *Overlord*, enemy morale, and oil, were in reality, Air Staff's battles. His aim was to have the bomber commander follow the path determined by the Air Staff rather than that mapped out by Harris. Bufton, as a trusted adviser to Portal, and occasionally Churchill, played a prominent role but he was never in a position to actually determine bombing policy. He could advise, recommend, and suggest, but he could never order, and Harris's failure to appreciate this fact was the cause of considerable rancour on his part. No matter who signed the Air Staff paper addressed to Harris, many of them drafted by Bufton, Portal had the ultimate responsibility. Portal, unlike Harris, accepted advice and on that counsel

determined bombing policy. His decisions, however, as we have seen, were rarely unilateral.

When Harris became AOC-in-C Bomber Command in 1942 he had a plan which he was confident would win the war: his bombers would blast and burn Germany's leading cities, destroy the industry they contained, kill the populace, and so lower morale that German calls to end the carnage would be irresistible. Bomber Command in 1942 possessed very few options but the display that Harris provided with the 1,000 bomber attack on Cologne in May 1942 won him not only the support of both Portal and Churchill but also confirmed that Bomber Command remained a vital element of Britain's armed forces. By 1943, Portal, considerably less inflexible than Harris, had come to appreciate that other options were now available to Bomber Command. His vision was that better results would be achieved by the employment of the bomber force as a rapier rather than the bludgeon perceived by Harris. Portal's bombing philosophy had changed; Harris's remained constant and that was the root of all the problems discussed in this work. Portal identified many ways in which Bomber Command could assist in helping to achieve victory; Harris continued to argue that victory would come his way and that his was the only way. Thus the stage was set for the arguments between the Air Staff and Harris, culminating in the oil differences in 1945, which so blighted relations between two elements of the Royal Air Force which should have been working in harmony.

Successive chapters have examined in detail particular facets of the strategic bomber offensive. Here it is necessary to summarise the relationship between Air Ministry staff, Sir Arthur Harris, and others involved in both strategic and tactical decisions relating to the bomber war. In a conflict in an ideal world, the Chiefs of Staff, in consultation with the War Cabinet, would reach agreement on the broad strategic objectives to be attained by the bomber forces. Assuming that the Air Staff agreed that the bomber forces available were adequate for the task, these objectives would then be translated by the Air Staff, employing clear and concise bombing directives, into specific targets for attack by the bomber forces. Unfortunately, bombing directives, throughout the war, were an on-going cause for concern. After the problems of distribution and dissemination had been overcome they still, all too often, lacked precision.

Harris's actions in relation to both the *Casablanca* and *Pointblank* Directives, issued in 1943, merit close consideration. The broad aim of both Directives was "the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened."¹ The primary task for the Eighth Air Force, as defined in *Pointblank*, was the reduction of German Air Force fighter strength. Bomber Command was to continue with the general disorganisation of German industry, but their operations, as far as practicable, were to be "complementary to the operations of the Eighth Air Force."² The next paragraph in the Directive detailed the tasks: devastation of air-frame, engine and component factories; disorganisation of industrial areas associated with these industries; destruction of aircraft repair depots, storage parks and of fighters on the ground.

The intention of the Directive should have been clear to Harris. He, however, chose to advise the Air Ministry, by subtle rewording, that Bomber Command's primary objective was enemy morale.³ It appears that Harris's contrived obtuseness went unnoticed by the Air Staff; in any case, no action was taken relating to his unauthorised revision of the Directive.

Directives were, of course, the responsibility of the Air Staff and they must bear the responsibility for any looseness of wording which allowed the intention of the instruction to be avoided. It was also the Air Staff's duty to ensure that misinterpretations, accidental or deliberate, were brought to the attention of the responsible officer and corrections made. Harris on too many occasions was left unchecked.

By 1943 of course, Harris was in a unique position. Churchill, aware that Bomber Command was the only British military arm capable of significantly taking the war to the enemy, had become his champion. Two factors were responsible. Firstly, Churchill, cognizant of military deficiencies, was anxious to forestall discussions relating to considerations for a second front. Secondly, he had been won over, in the early summer of 1942, by the propaganda success achieved by Harris with his 1,000 bomber raid on Cologne. Chequers, Churchill's residence, Bomber Command Headquarters at High Wycombe, and Harris's residence, *Springfield*, in the village of Great Kingshall, were in close proximity. The fact that they were almost neighbours enabled Harris to enjoy frequent and regular

personal contact with the Prime Minister. Few have seen fit to criticise this relationship as improper, in the military sense, yet Harris, by making decisions without reference to his superiors in the Air Ministry, but doubtless encouraged by Churchill, was clearly short-circuiting military protocol.

In his biography of Harris, Probert agreed. His opinion was that "It was of course a highly unusual relationship cutting across all the conventional lines of command and responsibility."⁴ However, he rejected the opinion of De Groot, Sinclair's biographer, who claimed that "the Prime Minister essentially allowed Harris to wage a private war."⁵ But others have demurred at Probert's assessment. Air Vice-Marshal Kingston-McCloughrey believed that "His entree to the Prime Minister . . . gave Harris the power to bully and often to dictate to the Air Ministry."⁶ Bufton was somewhat more restrained. He commented:

Bert Harris had ready access to the Prime Minister . . . and it is my belief that with the support of Lord Cherwell he had some backing from the Prime Minister for his private war of city bashing. This support did not last for ever and was never overt support . . . but it strained relations with the CAS, diminished confidence, and made it difficult for the CAS to keep too tight a rein, except on major issues.⁷

Although Churchill's support for Harris fell away markedly during 1944, and ended abruptly following the Dresden attack in February 1945, his earlier apparent empathy with the AOC Bomber Command led some to believe that Harris had indeed been given a licence to wage a private war. Perhaps Churchill had early recognised that Harris's personality matched his own. Both were reluctant to take advice and responded angrily when they believed obstructions were being placed in their path. The effects of the Churchill/Harris relationship were long lasting. Perhaps, even by late 1944, Bomber Command had the capacity to bring an early end to the war, but the effort at that time was divided. While the Air Staff argued for an all-out oil offensive, Harris largely continued with his area bombing programme. Despite Portal's best efforts, Harris persisted with his area bombing programme in 1945, and once again the opportunity to possibly bring the war to an early close was lost.

The first major conflict that the Air Staff (in the form of Bufton initially) had with Harris, related to the formation of the Path Finder Force. Harris was wrong in

opposing its formation, and he was guilty of disloyalty, at the least, when he admitted that he had deliberately worked against it from its inception. No crew selection was made when it was formed; crews were simply transferred *en masse*. Hand picked crews were acceptable later in 5 Group, for 617 Squadron in particular, but the only priority the Path Finder Force enjoyed in crew selection was that they were allowed first choice in personnel graduating from OTUs. The Path Finder Force was never given priority in the provision of new equipment; VHF radio equipment for air-to-air communication is but one example. Finally, the transfer of three Path Finder Force squadrons (two Lancaster and one Mosquito) to 5 Group in April 1944, ostensibly on loan, was the means by which Harris achieved his aim, the establishment of another marking force in at least one other Group. The transfer came at a time when Bomber Command was expanding and the Path Finder Force should have been encouraged to do the same. Instead, under Harris's stewardship, the PFF was reduced in size. Thanks to Harris's interference the grand plans conceived for the Path Finder Force were never allowed to come to full fruition. They performed remarkably but Bomber Command's overall achievements were reduced by Harris's on-going opposition.

From the beginning of Bufton's tenure in the Directorate of Bomber Operations, it was always his aim that ultimately Bomber Command would be capable of solving the tactical problems associated with the attack of precise targets. He had written many Papers on the subject and the Directives, from 14 February 1942, he claimed, were framed with that ultimate intention in mind. It was also Bufton's belief that Bomber Command possessed the capability for precision attacks

and could have done so had they wished. They could have developed a low-level marking technique in 1942 had they had the vision . . . and given to the PFF the enthusiastic support and the overriding priority in the selection of crews which they later gave to 617 Squadron But then the pass was fumbled. The Pathfinder Force was formed 'over the dead body' of the Commander-in-Chief, and its activities were directed not to the attack of precise targets, but to the attack of cities.⁸

The second confrontation related to the efforts made by the Air Staff to have Harris turn his attention the German ball bearing industry in the city of Schweinfurt. With two exceptions, Harris resisted all efforts throughout the war to get him to

direct his attention to Schweinfurt and ball bearings. He identified the industry as a panacea and an unnecessary diversion from his area bombing programme. His excuse was that Schweinfurt would be virtually impossible to locate. Eventually, after gentle persuasion had been seen to fail, Bottomley, on 17 December 1943, wrote another letter to Harris. He affirmed that

All our own and the American economic and ball-bearing experts are unanimous in the opinion that the destruction of the Schweinfurt ball-bearing industries would constitute a deadly blow to Germany's war economy. We are . . . all hoping that you will be able to reach out to Schweinfurt at the earliest opportunity.⁹

Harris's response to Bottomley's letter was that "I do not regard a night attack on Schweinfurt as a reasonable operation of war."¹⁰ It was a stern rebuff.

With discussion and letters having achieved nothing, the Air Ministry turned to a Directive. On 14 January 1944, Harris, with respect to Schweinfurt, was directed to "attack it in force on the first opportunity when weather and other conditions allow, and that you continue to attack it until it is destroyed."¹¹ Harris's equally sharp reply to the Directive was that Schweinfurt presented "grave strategical and other objections."¹² His four page letter concluded that, although he had had Schweinfurt in mind for nearly two years, the opportunity to attack in conditions giving reasonable hope for success, had never arisen. With the Schweinfurt defences having recently increased, Harris declared "all chances of a successful attack by my Command on Schweinfurt are gone."¹³

Harris's denial finally exhausted Air Ministry patience. In a letter from Bottomley on 27 January 1944, Harris was ordered to "proceed with the execution of the instructions contained in the letter . . . dated 14th January, 1944."¹⁴

Bomber Command carried out two attacks on Schweinfurt (February and April 1944) and early in July 1944, in a Weekly Intelligence Report, the MEW estimated that German ball bearing production had fallen by 54.5 per cent as a direct result of bombing attacks. Harris in a letter to the Air Ministry on 8 July 1944, seized this figure eagerly. Such a reduction, he protested,

could not have been otherwise than a fatal blow to the German war effort I trust that the MEW will be called upon to account for their overweening enthusiasm over the enemy's ball bearing

position, in view of their calculations as to the effects already achieved at so heavy a cost in life and effort.¹⁵

Geoffrey Vickers, Head of the Enemy Resources Department in the Economic Intelligence Branch of the MEW, responded strongly to Harris's attack. He pointed out that in January 1944 ball bearings had been identified as an industry for attack where "success today will most affect the enemy's power of a continued resistance. It is thus recommended, not as a 'panacea,' but as the best practical objective for impairing the enemy's ability to fight."¹⁶ According to Vickers, a report by MEW on 5 June 1944 estimated that ball bearing production, since July 1943, was down to 71.5 per cent in January 1944, and 45.5 per cent by April 1944. The slow decline from August 1943 to January 1944 was attributed to "the use of pipeline stocks, some substitution . . . and the relief afforded by diminished aircraft production."¹⁷

Vickers then referred Harris to a paper, *German Weaknesses*, no date specified, issued by the JIC. This paper, he pointed out, described the shortages being experienced by the Germans in various types of weapons and equipment, including aircraft, tanks, and motor transport. Vickers made clear that he would not, even with the latest figures to hand, alter any word of the appreciation provided by MEW in January 1944. "I am driven to the conclusion" he affirmed, "that the C-in-C expects some result from industrial bombing other than that which we forecast. If so he must not blame us if his expectations are disappointed."¹⁸

Bomber Command's efforts to influence German ball bearing production were too long delayed and insufficiently concentrated to produce significant effects. Harris was probably correct, early in 1942, to claim that Schweinfurt was not a target that could be successfully attacked with the aircraft, bombing, and navigation equipment, then available to his Command. He was also, perhaps, correct to claim that it would have been a difficult target in the short summer nights of 1943, although targets at longer range were bombed in that period and Bennett, the PFF leader, had agreed that his force was available to lead. Two unsuccessful attacks on Schweinfurt in February and April 1944 were never going to close down the German ball bearing industry. Maintenance of the aim and concentration, two vital elements of the principles of war, were never pursued in the case of Schweinfurt.

With regard to Schweinfurt, almost certainly the target most referred to by Webster and Frankland, Bufton consistently reiterated that the Air Staff made serious efforts to counter Harris's objections and persuade him to launch an attack. Ultimately, however, he admitted that "it was not the RAF style to control Commanders too closely, but in the end a direct order was issued on 14 January 1944."¹⁹

Middlebrook, in *The Schweinfurt – Regensburg Mission*, taking note of Bufton's opinion, was severely critical of Portal, claiming that he

could have issued a direct order to Harris at any time he wished, but that was not the R.A.F.'s style to control commanders too closely and he did not issue that direct order until early in 1944. The ultimate responsibility for any failure by the R.A.F. to follow up the American attacks on Schweinfurt rests with Sir Charles Portal, who could have imposed his will earlier.²⁰

Well aware that Harris's obtuseness and rigidity had been of serious concern to Portal, Bufton was quick to leap to the CAS's support. In his response to Middlebrook, he argued that the difficult decision Portal made to give Harris a direct order to attack Schweinfurt, was to his credit. Bomber Command's attack on the night of 24/25 February 1944, following the Eighth Air Force raid earlier the same day, had, Bufton contended, marked the starting point for the close cooperation required for the Combined Bomber Offensive.²¹

Although possibly the jury is still out on the question of responsibility for the failure of the attack on the German ball bearing industry, two final points must be made. Firstly, it has been suggested that Harris's prolonged refusal to act, verged on insubordination.²² If that view is sustained, then Portal must bear a measure of the responsibility for the failure.

Secondly, had attacks on ball bearings been pursued as diligently, from the time they were accorded priority, as area attacks on German cities, who knows what the results might have been. Albert Speer, Hitler's Munitions Minister, entertained no doubts. Post-war, he averred that Harris was wrong when he claimed, in December 1943, that the industry would by then have been decentralised.²³ It was still only under discussion in January 1944 and as late as August 1944 difficulty was still being experienced in "pushing through the construction work for the shift of ball-bearing production."²⁴ In April 1944, Speer

acknowledged, “the Allies threw away success when it was already in their hands. Had they continued the attacks . . . we would have quickly been at the last gasp.”²⁵

But even ball bearings do not provide a clear-cut example for any allocation of culpability and must therefore remain a debatable question.

The final target system that raised passions almost to fever pitch was German oil. Guilt has been acknowledged. Harris admitted that he had been opposed to the attack of oil because he believed that it meant a diversion of effort; it prolonged the

respite which the German industrial cities had gained from the use of the bombers in a tactical role In the event, of course, the offensive against oil was a complete success . . . what the Allied strategists did was bet on an outsider, and it happened to win the race.²⁶

Unfortunately, because of Churchill’s opposition, no truly independent, unbiased, and wide-ranging investigatory team was ever established by British authorities to consider the overall effects produced by the Combined Bomber Offensive. Initial plans to form a broad-based British Bombing Research Mission were revised when Churchill, for unexplained reasons, prevaricated. Tedder, in January 1945, described Churchill’s decision to limit the survey, as “scandalous, perverse, ‘personal and political.’”²⁷ Instead, a small British Bombing Survey Unit (BBSU) was established with Air Commodore Pelly as Head, and Professor Zuckerman as Scientific Adviser and ultimately author of the final *Report*. Tedder’s promotion to CAS on 1 January 1946 meant that the primary wartime driving forces for bombing attacks on communications, Zuckerman and Tedder, were now in prominent positions to influence the findings of the BBSU. Thus, “by default the final *Report* came to reflect the views of the wartime lobby which had most strongly favoured transportation bombing over other target systems.”²⁸

By September 1944, when control of the bomber forces was relinquished by SHAEF and reverted to Portal and Arnold, oil had once again become a significant target. The Air Staff, employing letters signed by Portal but largely drafted by Bufton, made strenuous efforts to convince Harris that if Bomber Command joined with the Eighth and Fifteenth Air Forces and attacked oil, the war could be brought to an early conclusion. Harris, however, persisted with area attacks on German

cities and from October to December 1944 (inclusive), fifty-three per cent of his bombing effort was directed at German industrial cities and only fourteen per cent at oil targets. Then, over the winter of 1944/1945, he carried on a paper war with Portal, his superior. Although the BBSU Report dealt at length with the oil versus transportation question the Air Staff, during that crucial period, were confronting yet another attempt by Harris to run the war his way. Their primary concern was the continuation of his area bombing programme when they believed the best returns would have been obtained from attacks on oil targets. No consideration was given in the *Report* as to whether oil or area attacks provided the best returns for the bomber efforts. Somewhat lamely, the *Report* implies that Harris made every effort to fulfil Air Staff requirements for oil attacks, by agreeing with him that weather, during October, November, and December 1944, had provided only limited opportunities for visual bombing.

The expression “somewhat lamely” has been employed for several reasons. Firstly, in order to prevent increased oil production, it had been decided by the Air Staff that maximum use of blind bombing procedures (enhanced by the siting of Oboe and GH stations on the Continent), together with greatly increased bomb tonnages, would have to be employed. It had also been decided that instead of spreading attacks, every effort was to be made to create long-term destruction. Two of the most important oil targets late in the war were Pölitz and Leuna but even when weather conditions improved during the second half of December 1944, Pölitz was attacked only once (by 184 Lancasters from No. 5 Group) and Leuna not at all. Little effort appears to have been made to increase either blind bombing or repeated heavy attacks on oil targets as the heaviest raids in that fortnight were 523 aircraft against Duisburg and 470 aircraft against Cologne.

Zuckerman’s BBSU assessment agrees closely with that reached by the Chiefs of Staff Committee’s Technical Sub-Committee on Axis Oil which, in March 1946, noted:

In the last three months of the year R.A.F. Bomber Command carried out 38 attacks on oil targets (20 by day and 18 by night). A study shows that there were 7 other nights and 3 days when weather conditions might possibly have permitted attacks. . . .

Operations against other strategic target systems during this period were carried out on 35 days and 46 nights.²⁹

Had Bomber Command gone the extra mile against oil, who knows what the result might have been. Speer, in a note to Hitler in 19 January 1945, described how several oil plants had experienced prolonged shut down; that repairs had become difficult; that night attacks were more effective than day because heavier bombs were used; and that

extraordinary accuracy [was being] achieved; therefore even if the repair and production during the first quarter of 1945 were to proceed undisturbed, the planned production, which during the final quarter of last year seemed possible, can no longer be achieved.³⁰

Despite the condemnation of Harris for his failure to have his bomber force participate in the oil offensive as fully as Portal required, there is one important point to remember. Portal's difficulty was that because Harris had admitted to being unable to accept the validity of the oil plan, Portal found it hard to believe, despite repeated assurances, that Bomber Command's attacks on German oil were being fully pressed home. The weather during the last three months of 1944 provided few opportunities for visual bombing but the figures shown above, from the Chiefs of Staff Committee, confirm that some considerable effort had been mounted against oil in difficult conditions. The critical figure, however, is that during that three month period only fourteen per cent of the total bombing effort was directed against oil targets. Had Harris launched one or two more attacks, or had some of the attacks been heavier, then perhaps what Harris had actually provided would have come closer to Portal's requirements. The gap between them was narrow and it was created by the European winter weather rather, perhaps, than any perception by Harris that the oil plan was invalid.

Another question to be considered in any discussion concerning Portal and Harris is leadership. Effective leadership is a fundamental requirement for any military service to be run effectively and efficiently. Without positive leadership aims simply become pipe dreams. Effective leadership, however, is not merely the product of a specific formula, because the requirements, as technology develops, are also in a state of flux. Positive leadership requires strength of mind, because to be successful requires that opposition be overcome, or removed.

Portal's leadership qualities were, perhaps, best displayed in his extended fight for resources. He employed reasoned arguments, tact and diplomacy; prepared to yield when accepting the inevitable, in order to obtain the longer term benefits. Harris, on the other hand, was a leader cast in a different mould. His narrowness of vision prevented him from seeing that there were other ways than his. He brooked no contradiction. Both were remote figures, but while Portal exerted authority employing judgement and perception, Harris relied upon bombast, and the ability to display the grand gesture. Cologne and Hamburg in 1943 provide classic examples. Berlin, in the winter of 1943/1944, was intended by Harris to be another symbol of the correctness of his arguments, but the campaign was a signal and costly failure. Unfortunately, the facts revealed during that hard-fought winter did not register with Harris. Morale was not going to be the Achilles' heel in the German social structure.

History has shown that leaders are not infallible. True leaders will accept the lessons provided by failure, and become better leaders as a consequence. Portal's leadership qualities were well displayed in his handling of the Churchill outburst following the bombing of Dresden in February 1945. He may have felt anger and outrage but personified reason and calm. His insistence that the Churchill Minute of 28 March 1945 be withdrawn was accepted by the Prime Minister, who then authorised Portal to submit a re-draft.

Portal's relations with his subordinate, Harris, unfortunately, do not display the same leadership qualities. He spent many months of reasoned argument concerning the need for the formation of the Path Finder Force, and for an attack on the ball bearing facilities at Schweinfurt. In the case of the Path Finder Force, Harris immediately set about reconstituting the force to his own design, yet Portal did nothing. As a last resort in the case of Schweinfurt, Harris was ordered to comply with the Air Staff's requirements. When the attack was finally delivered Harris had been permitted to procrastinate to such an extent that it was too late to be effective no matter how much damage was created.

With regard to German oil facilities, Portal reasoned and argued with Harris, but never went as far as ordering. Instead, with final victory seemingly inevitable, he weakly conceded defeat, acknowledging, "We must wait until after the end of the war before we can know for certain who was right."³¹ Harris's post-war

admission that Portal had been correct was one of the rare occasions that Harris ever admitted to having been wrong.

In general, those responsible for directly controlling the bomber war, the Air Staff and Group Commanders, were officers well known to each other over a very long period. They were aware of each other's weaknesses and strengths, and among them strong friendships had developed. Harris, in the case of Coryton, showed that in order to achieve perceived needs, he was prepared to override friendship. Coryton was replaced. Likewise, Air Marshal Sir Richard Peirse was removed from his appointment as AOC-in-C, Bomber Command, in January 1942, because the Air Staff, and Churchill, were dissatisfied with his performance. Portal, for whatever reason, in the case of Harris, was unwilling to take that final, crucial step. According to Anthony Verrier, it was because of his desire to preserve amity that he allowed Harris to dominate. Perhaps it was amity that Portal desired to preserve, but in attempting to do so he yielded the authority that he possessed as CAS. His attempt at amity preservation, Verrier observed, "made him impotent when dealing with his subordinate."³²

Sebastian Cox has claimed that Harris was a "single-minded and forceful leader with an acute mind."³³ He was certainly single-minded, almost to the nth degree, while his forcefulness was regularly displayed in his wide-ranging, often pungent, correspondence. His intellectual acuteness is, perhaps, more debatable. He was the authority who, in February 1941, as DCAS, claimed that Bomber Command had no need for any form of bombing or navigational aid such as the *Knickebein* beams employed by the *Luftwaffe* over England. "Such aids" he argued, "are not indispensable to the successful prosecution of bombing . . . I would go further and say that they are not even really useful."³⁴

His mind-set, (it could also be described as tunnel vision, regarding beams), perhaps explains his initial antipathy towards Gee. Probert has suggested that Harris had become disillusioned with his Signals Staff who were full of promises but provided nothing. Gee, apparently, was a typical example, "and the whole business left him in a state of complete despair."³⁵ However, Harris did eventually come to appreciate Gee as a useful navigational tool, providing a measure of concentration in bombing attacks, and a safer return to bases in the United Kingdom.

Employing a selectively abbreviated quotation from the Directive of 14 February 1942, Sebastian Cox claimed that the Air Staff believed that Gee “would prove to be good enough as a bombing aid, once sufficient experience had been gained, to allow for ‘effective attacks on precise targets.’”³⁶ The Directive had, in fact, been somewhat less positive and had included provisos. Trials by experienced Gee operators had shown that fixes had fallen about a desired aiming point in the form of an ellipse, measuring approximately twenty miles by two and a half miles, enclosing an area of about thirty-five square miles. Thus, the Directive of 14 February 1942, drafted by Bufton, was both cautious and forward looking. He made clear:

When experience in the employment of TR 1355 has proved that, under favourable conditions, effective attacks on precise targets are possible, I am to request that you will consider the practicability of attacking first, the precise targets within TR1355 range and, later, those beyond this range.³⁷

In other words, for the Directorate of Bomber Operations, Gee possibly offered prospects for the future as both a navigational and bombing aid but in the meantime they awaited proof. The phraseology is also indicative of the desire of the Directorate staff for Bomber Command to return to the attack of precision targets as soon as possible.

Cox’s contention may have been supported by some in the Air Staff but certainly not by those in the Directorate of Bomber Operations. In December 1941 Bufton intimated: “It may be found that ‘G’ is accurate enough to enable us to attack precise targets but until this has been proved in practice we should plan for area targets.”³⁸ This belief was reconfirmed early in 1942. In an unsigned paper, it was stated that Gee might enable Bomber Command to concentrate on specific key targets in the future, but in the meantime, “Gee can be more effectively employed in carrying out heavy, concentrated and continuous bombing of a few selected area targets in Western Germany.”³⁹ Possession of Gee, it was hoped, would also enable the bombing force to concentrate their efforts. Concentration would provide increased devastation.

Harris’s narrowness of vision is perhaps best exemplified in his treatment of scientists, in particular those who attempted to interest him in projects hitherto

beyond his ken. Navigational and bombing aids have previously been discussed, but perhaps Dr Barnes Wallis and his bouncing bomb, employed in the Dams Raid in May 1943, is worthy of examination. Early in the matter, in a note to Saundby, Harris described the idea as

tripe of the wildest description . . . there is not the smallest chance of it working . . . At all costs stop them putting aside Lancasters and reducing our bombing effort on this wild goose chase . . . the war will be over before it works – and it never will.⁴⁰

Harris, in *Bomber Offensive*, gave no hint of his initial antipathy towards the project, but Webster and Frankland made clear his deep-rooted opposition.⁴¹ There is also a letter Harris sent to Portal in February 1943, expressing his deepest concerns relating to the *Highball* and *Upkeep* propositions.⁴² He complained:

I cannot too strongly deprecate any diversion of Lancasters at this critical moment . . . With some slight practical knowledge . . . I am prepared to bet that the Highball is just about the maddest proposition as a weapon that we have yet come across.⁴³

Portal, who like Harris was not initially convinced of the viability of the *Highball* and *Upkeep* projects, attempted to be reassuring. He promised Harris that he would

not allow more than three of your precious Lancasters to be diverted for this purpose until the full scale experiments have shown that the bomb will do what is claimed for it . . . if Highball fails, Upkeep will be abandoned too.⁴⁴

To conclude this résumé of Harris's perceived deficiencies, note must be made of his inability to recognise, as late as January 1944, Bomber Command's capacity for accurate precision bombing. His suggestion, in January 1944, was that the best contribution his Command could make to *Overlord*, was

the intensification of attacks on suitable industrial centres in Germany as and when the opportunity offers. If we attempt to substitute for this process attacks on . . . communications . . . we shall commit the irremediable error of diverting our best weapons from the military function, for which it has been equipped and

trained, to tasks which it cannot effectively carry out It would lead directly to disaster.⁴⁵

Harris repeated similar claims at a conference at AEAF Headquarters, Stanmore, a month later. The claim made for the importance of rail communication attacks, he argued, “was based on a fallacy . . . he did not believe the rail communications . . . could be sufficiently interrupted by air attack to impede military movements.”⁴⁶ He stated, also, that the claims made for Bomber Command’s precision when employing Oboe, were “completely inaccurate.”⁴⁷ Harris avowed that he was prepared to “give a written guarantee that the proposed plan for interrupting the railroad communications would not succeed and that the army would then blame the Air Forces for their failure.”⁴⁸

Late in March 1944 Harris wrote to Portal to make his position clear as to what he believed were Bomber Command’s requirements prior to *Overlord*. The primary object, in his opinion, “will be to complete the destruction of the existing and prospective resources of the G.A.F.”⁴⁹ He next proceeded to attack the instructions in both the *Casablanca* and *Pointblank* Directives. They required that Bomber Command attack area targets associated with American targets, and, assuming that similar objectives would be outlined in an anticipated *Overlord* Directive, he wished to voice his protest. He declared:

I wish therefore to state most emphatically that . . . on the . . . evidence gained from attempts to conform to detailed Air Ministry programmes rather than Directives in recent months, this policy is mistaken.⁵⁰

Freedom of action was Harris’s requirement. “I would ask” he pleaded,

for a Directive which gives me full discretion as to what German target I shall attack on any given night, subject only to the proviso that, when weather conditions, in so far as they can be predicted early in the day, give real prospects of success against nominated targets, these will be given preference over others where chances of success are equally good.⁵¹

The next day, at a meeting to discuss bombing policy prior to *Overlord*, Harris gave reluctant confirmation that Bomber Command would carry out precise attacks, using Oboe, on railway centres. There were twenty-six listed targets and he expressed his doubt, in the time remaining, that they could all be dealt with. He

continued to oppose the transportation plan, and argued again to be allowed to continue his attacks on German cities. They, he stated, perhaps sarcastically, “have some incidental effect on the enemy’s transportation system.”⁵² In the event, of course, transportation bombing, by both Bomber Command and the Eighth Air Force, played a very significant part in the success of *Overlord* and the land campaign that followed. Unfortunately, from 25 September 1944 when Harris came again under the supervision of the Air Staff, his direction, when given any freedom of action, was largely focussed on German cities and to the end he continued to laud the success of his area bombing of those targets.

Eisenhower, however, was unstinting in the praise he accorded Harris for the support that he and Bomber Command had given to the D-Day landings and subsequent land operations. In a letter to General George C. Marshall, the United States Chief of the Combined Staff, he commented,

You might be interested to know, in view of my earlier expressed fears that Air Chief Harris would not willingly devote his command to the support of ground operations, that he actually proved to be one of the most effective and cooperative members of this team. Not only did he meet every request I made upon him, but he actually took the lead in discovering new ways and means for his particular type of planes to be used on the battlefield.⁵³

The problems that arose between the Department of Bomber Operations and Harris were not necessarily all to be blamed on one side or the other. Perhaps Bufton was over-eager to have the bomber war fought the way he believed best; equally, perhaps Harris was a little unreceptive to new ideas, particularly from junior officers. Sebastian Cox has argued that

It was surely less than wise to contrive to have the Directorate of Bomber Operations staffed by a triumvirate not one of whom held the respect of the C-in-C of the Command they were required to work closely with.⁵⁴

Presumably Cox had in mind Bottomley, Baker, and Bufton. Ignoring the fact that Bottomley was either ACAS(Ops) or DCAS, and thus not employed directly in the Directorate of Bomber Operations, Cox’s argument must be rejected. The only way to have satisfied Harris would have been to have staffed

the Directorate of Bomber Operations with 'yes' men. Harris was notorious for confusing "advice with interference, criticism with sabotage and evidence with propaganda."⁵⁵ Others may well have found the three mentioned perfectly satisfactory, even in the highest appointments. Portal certainly found them to be very acceptable subordinates. In the case of Baker, Harris's claim to have threatened to resign if Baker was appointed as a Group Commander does him no credit. It was an example of 'bully boy' tactics, and unworthy of a senior officer. Who, one must enquire, did Harris actually like?

One, clearly, was his SASO, and later his Deputy, Air Marshal Sir Robert Saundby. Saundby remained *in situ*, not because of his dynamic promotion of ideas, but simply because he never disagreed with his superior, and because he never made a decision without first having consulted Harris. Saundby was so out of date operationally that he had come to believe, in 1950, that Bomber Command had gone to war in 1939, fully prepared. He claimed that

we had always doubted the possibility of daylight bombing, and we therefore before the war, backed it both ways. Our heavy bombers were suitable for use at night and our crews were well trained in night operations.⁵⁶

Indeed! So the leaflet training flights were a waste of flying time! It is no wonder that Bufton was recommending, early in 1942, that Saundby, his deputy, and the Group Commanders in 1, 3, and 4 Groups be replaced by officers with current night bombing experience.⁵⁷ Unfortunately, Directorate staff could only advocate and in this particular instance their calls were ignored.

Frankland, discussing Saundby, was cuttingly trenchant. As a conversationalist, he deemed him erudite and articulate, but, he continued, "I learnt to be cautious about his criticism and praise, which was the product of a two-faced attitude fostered by a fundamentally weak moral character."⁵⁸

Harris may well have appreciated having Saundby as his deputy. The latter knew better than to disagree with Harris, and thus the partnership was maintained. Saundby "smoothed paths and soothed friction."⁵⁹ Unfortunately, he was the wrong man to have as Harris's deputy. Harris required a sounding board; some one to challenge decisions; proffer alternatives; provide guidance; not one who always meekly agreed and fended off both critics and criticism. Certainly it was a

partnership that worked; but it was not for the betterment of either Bomber Command, or the strategic bombing offensive.

Although attention and argument, in relation to the bombing of German oil targets, has focused largely on whether or not the war might have been brought to an earlier close, even more pertinent challenges could have been raised concerning Harris's position as Commander-in-Chief, Bomber Command. His removal would certainly not have passed without significant comment. He had reigned supreme during some of his Command's darkest times, and now, with victory almost at hand, was his deposition an appropriate move?

What had Harris done when in a similar position? His treatment of subordinates was ruthless. His removal of the Air Officer Commanding 5 Group, Air Vice-Marshal Coryton early in 1943, has been described in detail in Chapter Three but it was done in a considerate manner and was never regarded as a punishment although doubtless to the individual concerned it was not a pleasant experience. Portal, certainly by 1945, might, with advantage, have used Harris's dismissal letter to Coryton as a draft for one he himself should have written to Harris.

Equally, there were other examples of identified requirements for the removal of senior officers where action had been taken. In November 1940, despite their achievements in the Battle of Britain, Air Chief Marshal Sir Hugh Dowding was replaced as Air Officer Commanding-in-Chief, Fighter Command and one month later Air Vice-Marshal Sir Keith Park was relieved of his appointment as AOC, No. 11 Group, Fighter Command. Ignoring the controversies relating to the question of the employment of 'big wings,' and the possibilities of vaulting ambitions, justification for their removal was provided by the length of time Dowding had served as AOC-in-C and the strains under which both had been placed during the closely fought and tense battle.⁶⁰

Churchill, however, raised the point that there were possibly other unwelcome forces at work in the Air Ministry. In the spring of 1941 the Air Ministry released a pamphlet relating to the Battle of Britain but it included no reference to Dowding and Churchill was incensed. He declared that

The jealousies and cliquism which have led to the committing of this offence are a discredit to the Air Ministry and I do not think any

other Service Department would have been guilty of such a piece of work.⁶¹

Within any military organisation procedures are crystal clear. Lawful orders issued to a subordinate are to be obeyed. It matters not whether it is a Lance Corporal to a Private, or a Marshal of the Royal Air Force to an Air Chief-Marshal, failure to obey is a military offence. Harris's failure to comply fully with the Air Staff's requirements regarding oil attacks, although no specific order was given, could have been defined as disobedience or, at least, dereliction of duty. His admission, in a letter to Portal on 28 December 1944, that "nothing will disillusion me of the view that the oil plan is, for reasons I have given . . . on many occasions elsewhere, another panacea,"⁶² was self-damning.

Harris's removal would not have been unique. Whether he was ultimately right or wrong matters not a whit. He had been presented with a lawful order, in the form of a Directive, which required compliance. His inability, disinclination, or refusal, to fully meet the requirements detailed by his superior, demanded his removal. As with Coryton, there was no necessity to announce his move as a punishment. He could, for instance, have been posted to SHAEF, just as Coryton had been transferred to the Air Ministry as ACAS(Operations). Harris could have been honourably retired on the grounds of ill-health (he had a chronic duodenal ulcer); and, after almost three years as AOC, Bomber Command, was clearly approaching the time when a rest was becoming essential, if his health was not to be permanently impaired. Finally, Harris could have been transferred to provide operational experience for another senior officer, just as the AOCs of Numbers 1, 4, and 5 Groups were posted early in 1945.

Perhaps Slessor, indirectly, got to the nub of the matter in *The Central Blue*, when discussing the *Casablanca* Directive. This Directive, he pointed out, was not in fact a Directive, but even more importantly, was a policy statement on the future conduct of the war. It accorded priority to the bomber forces for concentration on Germany. The important objectives were listed, but it was left to Portal to decide when and to which target the pressure should be applied. He continued,

If subsequently, too much latitude was left to commanders-in-chief – if in particular Harris was not sufficiently closely controlled – the

blame for that cannot be laid at the door of the Casablanca directive.⁶³

What have others to say concerning Harris's removal? Probert, somewhat ambivalently, argued: "It is very hard to see what purpose would have been served had he been removed."⁶⁴ Surely what would have resulted was a concentration upon oil targets – the Air Staff requirement. Clearly the attack upon enemy morale was not succeeding and the German people, no matter how much they resented the Nazi regime, were becoming ever more reliant upon that "regime to feed them to re-house them, to evacuate them, indeed to enable them to survive at all."⁶⁵ Total concentration upon oil targets rather than upon German cities, morale, and oil, could possibly, as others have argued, have brought an earlier end to the war.

Webster and Frankland perhaps struck a somewhat pessimistic note. Their opinion was that "No other course at this stage of the war was open to Sir Charles Portal which would not have been a remedy worse than the disease."⁶⁶ But by allowing the disease to run its inevitable course, Portal himself became a victim. Every vestige of authority which he should have had over Harris was removed. Portal had placed himself in an impossible position.

One who agreed with Webster and Frankland was John Terraine. Portal, Terraine believed, became a victim of the aura which develops around apparently successful military commanders. Harris had that aura. However, it can be argued that had Harris's transfer been handled appropriately, that aura need not have been disturbed. By retaining the *status quo*, Portal lost his authority. Terraine took the matter even further. "For Harris and his Command" he observed,

it meant that their prolonged and valiant effort would fall at the last under a shadow which, in future decades, would sadly diminish recognition of their high endeavour. For amid the list of cities on Bomber Command's agenda, awaiting the Harris treatment, was Dresden.⁶⁷

Harris was but one player in the drama concerning Dresden, and in fact not even the leading one. But he was an easy target and upon him and his Command the post-war venom has been directed. Public opinion is fickle.

Max Hastings, however, believed that Portal should have taken positive action. In his opinion, Portal "flinched from sacking his C-in-C, and having shown

his own weakness, had no further sanctions against him.”⁶⁸ Hastings, however, is not always accident free when it comes to marshalling his evidence. His claim that Speer was talking of the oil offensive when he asserted that “the Allies threw away success when it was already in their hands,”⁶⁹ is incorrect. Speer was actually discussing the offensive against ball bearings.

Hastings, in a postscript to a letter to Bufton, advised him that in his book *Bomber Command* he was going to “be hard on Portal for his unwillingness to sack Harris in the winter of 1944 re the oil plan,”⁷⁰ so the book came as no surprise. Nevertheless, Bufton was quick to Portal’s defence. “Bert Harris” Bufton asserted,

was by no means perfect as C-in-C Bomber Command, but then no man is ever perfect. Before you say Portal should have sacked Harris in the winter of 1944 you must say who he should have put into Harris’s place. If you can’t do this your argument is void . . . I personally would have put in an ‘operator’ like Basil Embry but he was otherwise engaged.⁷¹

It might well be inferred from this correspondence that had Bufton been asked in 1944 whether Portal should remove Harris, he was ready with his response and had a replacement in mind.

Another who argued that decisiveness was required by Portal when dealing with Harris, was Mark Connelly. He suggested that

In not coming to a definite conclusion on what to do with a subordinate commander Portal may have been responsible for prolonging the war. Portal should surely have been decisive . . . Portal should have sacked Harris.⁷²

Robin Neillands fully agreed with Connelly and bluntly. With regard to the removal of Harris, he simply stated:

To suggest that Portal should have removed Harris from Bomber Command will not be a popular thing to say, but, clutching the benefits of hindsight, perhaps Portal should have done so. It would hardly have affected the outcome of the war, but it would have been a kindness to Harris, who had already been in the post far too long.⁷³

In this discussion concerning whether or not Harris should have been removed many conflicting views have been examined, but from the evidence provided in this thesis it is clear that his removal, on several counts, could have been justified. Perhaps Harris himself has provided the reason why he was not transferred. "Portal" he admitted,

was an incredibly fine fellow but there were times when he was too much of a gentleman . . . that was his one failing . . . and . . . in those days it was no good being a gentleman. You had to do whatever was necessary to get things done.⁷⁴

Buften, despite Harris's known dislike was, at times, prepared to be generous in his praise of Harris who, he admitted, had fended off those calling for bombers to tow gliders, bombers for Atlantic patrols and had successfully built up its strength. His performance, nevertheless, would have been improved, Buften claimed, had he accepted and backed the PFF as his own from the beginning, and had attempted to follow, more closely, the spirit of the Air Staff and Chiefs of Staff Directives. "At the end of the war" he continued,

we, in Bomber Operations, had agreed amongst ourselves that we would have forgiven the C-in-C Bomber Command everything had he put an extra 15% of Bomber Command on precise targets. Perhaps we were too kind.⁷⁵

This thesis has been a story of conflict, not in the night skies over Germany, but in the corridors of power among the upper echelons of the Royal Air Force, and specifically between Portal and Harris, with many, on the Air Ministry side, playing leading roles. All sides of the several disagreements examined have been fully aired and what should now be clear to all is that although ultimately decisions were reached, many of the difficulties remained because the determinations, on too many occasions, were never fully implemented. German oil targets provide the classic example; Harris was permitted to disagree with Air Staff policy and Portal did nothing. Webster and Frankland's summation regarding the question of the attack on German oil was explicit: "All that can be said is that, if it had been possible to press home the attack earlier, there can be little doubt that the collapse of Germany would have come sooner."⁷⁶

In some cases, Schweinfurt for example, although Harris was ultimately forced to launch an attack, it was too late for it to be militarily effective. The moment had well and truly been lost during twenty-two months of argument and disagreement. With regard to the Path Finder Force, although Harris was finally made ('coerced' or 'ordered' has never been clarified) to comply with Portal's instructions, he immediately set about the formation of a Path Finder Force in every Group. This was not merely simple disobedience: it was subterfuge meriting instant dismissal. Harris's refusal to allow the Path Finder Force training time, priority in aircraft and equipment, and selection of the best air crews, while concurrently supporting Air Vice-Marshal the Hon. Sir Ralph Cochrane of 5 Group, is indicative of the disharmony existing between himself and Portal. It was almost as if they were fighting different wars.

These are but three examples which confirm that the Strategic Bomber Offensive was badly mismanaged. They also provide support for the contention that Harris should have been replaced. His removal does not necessarily mean that the war would therefore have been brought to an earlier conclusion, but had it meant greater concentration on German oil during the winter of 1944/45, then that was a possible outcome. Nevertheless, it is important to appreciate that the destruction of Germany's oil resources was but one element in the total requirements for Allied victory. Even a sustained and effective oil offensive may not necessarily have brought about an early an end to the war. Total victory required industrial collapse in Germany together with the defeat of what was left of her armies in the field. Unconditional surrender, with the forces available, was never going to be either readily or speedily achieved. And so it proved.

Noble Frankland, however, has pointed out that the deep disagreements relating to targets after the middle of 1944 resulted in the bombing effort lacking concentration. He argued that the bombing

effort was divided to a greater extent than it need have been and it seems virtually certain that Germany's downfall could have been accelerated if a greater concentration had been achieved. Operationally it could have been achieved. If it had been, some months might have been taken off the duration of the war.⁷⁷

Apart from Portal and Harris, the figure given most prominence in this study has been Sydney Bufton. Most historians of the bomber war have seen him as playing but a minor part in the disagreements between Harris and the Air Staff. In fact, in both the PFF affair and the oil targeting question he was a leading player.

Bufton's role as Director of Bomber Operations and his part in the Strategic Bomber Offensive have been significantly under-valued because, although he was a decision maker, he was never in a position to issue the orders required to implement change. He had learned of some of the problems of the bomber war as an operational pilot in 1940/41 and he went to the Air Ministry convinced many changes were essential, and believing that he possessed some of the answers. But, as a junior member of the Air Staff, he was never in a position to order that alterations be made to equipment, methods, procedures or techniques. In the case of the Path Finder Force, Harris later deemed that the order he had received had been "yet another occasion when a Commander in the field was over-ruled at the dictation of junior staff officers in the Air Ministry,"⁷⁸ but, as has been shown, he was in error. In 1946, at the invitation of Air Commodore McEvoy, Director of Staff Duties at the Air Ministry, Bufton was offered the chance to provide his reactions to the Harris *Despatch on War Operations*. His extensive commentary included a powerful denial of Harris's claim of having been over-ruled. He affirmed that

The Commander in the field was not overruled at the dictation of junior staff officers in the Air Ministry. The idea of a Pathfinder Force (and its accompaniment of a Bomber Development Unit) was fully discussed within the Air Staff and with Bomber Command. The arguments for and against were weighed by the Air Staff, and the C.A.S., after full discussions with the C-in-C., finally decided that the scheme should be put into effect.⁷⁹

Bufton's task was to identify when change was required and then gather and collate supporting evidence from a wide variety of sources and present it to those appointed and in a position to issue the requisite orders. His staff, as the war progressed, were vastly experienced and, as new problems were revealed, wide-ranging discussions were held and consensus decisions reached and solutions provided. It was then Bufton's role to attempt to convince the Air Staff not only of the problem, but also of the correctness of the decision provided.

Harris should have been removed. It would not have been an easy step, but it had become a necessary one. Seward's claim that "Harris was irreplaceable"⁸⁰ was a nonsense. To assert that someone is irreplaceable indicates the non-acceptance of the one brutal fact of life: that in life there is but one certainty: death. The new Bomber Commander whether, Cochrane, Bottomley, or another, would have been different, but he would not necessarily have been worse. It is even conceivable that he might have been better. Harris's removal would not have been unique, but it had become a necessary step. Portal's failure to act, and the consequent weakening of his own position, is indicative of a flaw in his leadership qualities.

In conclusion, should any attempt be made to attach blame for what might be identified as an unnecessary prolongation of the Second World War, then that blame must be shared. Should the finger of blame be pointed at Harris then it is essential to remember that the responsibility for his appointment rests on both Portals' and Churchills' shoulders. There are a multitude of persons and reasons responsible for the war in Europe continuing until 8 May 1945 but if I have alerted readers to some of the other possibilities that might have influenced events then this thesis has achieved its purpose.

End Notes

¹ Bufton Papers, 3/47, Bottomley to Harris and Spaatz, 10 June 1943, p.1, para. 5.

² Ibid., p.2, para. 6.

³ PRO AIR 41/57, Frankland, *The Planning of the Bomber Offensive and its Contribution to German Collapse*, p. 108.

⁴ Probert, *Bomber Harris*, p.134.

⁵ Ibid.

⁶ Air Vice-Marshal E J Kingston-McCloughrey, 'Leadership with Special Reference to World War II,' in *RAF Quarterly*, Autumn 1967, p. 208.

- ⁷ Bufton Papers, 5/13, Personal Correspondence, Bufton to Max Hastings, 8 February 1978, para. 7.
- ⁸ Bufton Papers, 5/13, Bufton to Middlebrook, 7 September 1972, p. 5.
- ⁹ PRO AIR 2/4477, Bottomley to Harris, 17 December 1943, paras 4 and 5.
- ¹⁰ Ibid., Harris to Bottomley, 20 December 1943, para. 2.
- ¹¹ PRO AIR 20/5835, Bottomley to Harris, 14 January 1944, p. 2, para. 8.
- ¹² PRO AIR 2/4477, Harris to Under Secretary of State, 19 January 1944, p. 1, para. 2.
- ¹³ Ibid., p. 4, para. 16.
- ¹⁴ PRO AIR 20/5835, Bottomley to Harris, 27 January 1944, p. 2, para. 7.
- ¹⁵ Webster and Frankland, Vol. IV, Harris to Air Ministry, 8 July 1944, p. 253, paras 3 and 7. See also Webster and Frankland, Vol. II, pp. 59-72.
- ¹⁶ Bufton Papers, 3/51, Vickers to Air Vice-Marshal F F Inglis, ACAS (I), 26 July 1944, p.1.
- ¹⁷ Ibid., p. 2.
- ¹⁸ Ibid., p. 3.
- ¹⁹ Bufton Papers, 5/13, Bufton to Middlebrook, 27 July 1982, Comments, para. 3.
- ²⁰ Martin Middlebrook, *The Schweinfurt – Regensburg Mission*, (London, 1983), p. 297.
- ²¹ Bufton Papers, 5/13, Bufton to Middlebrook, 27 July 1982, Comments, para. 5.
- ²² W A Jacobs, 'The British Strategic Air Offensive Against Germany in World War II,' in Hall (Ed.), *Case Studies in Strategic Bombardment*, p. 138.
- ²³ PRO AIR 2/4477, Harris to Bottomley, 20 December 1943, p.1, para. 3.
- ²⁴ Speer, *Inside the Third Reich*, p. 287.
- ²⁵ Ibid., p. 286.
- ²⁶ Harris, *Bomber Offensive*, p. 220.
- ²⁷ Vincent Orange, *Tedder Quietly in Command*, (London, 2004), p. 281.
- ²⁸ Sebastian Cox, 'An Unwanted Child - the Struggle to Establish a British Bombing Survey,' Introduction to *Report of the British Bombing Survey Unit*, (London, 1995), p. xxi.

- ²⁹ Chiefs of Staff Committee, *Oil as a Factor in the German War Effort 1939-1945*, (London, 1946), p. 64, Note 5.
- ³⁰ United States Strategic Bombing Survey, *Oil Division Final Report*, 25 August 1946, p.137.
- ³¹ PRO AIR 8/1020, Portal to Harris, 20 January 1945, p. 3.
- ³² Neillands, *The Bomber War*, p. 349.
- ³³ Cox, *Airpower Leadership Theory and Practice*, p. 213.
- ³⁴ Jones, *Most Secret War*, p.169.
- ³⁵ Probert, p. 101.
- ³⁶ Sebastian Cox, 'Introduction,' in Sir Arthur T Harris, *Despatch on War Operations, 23rd February 1942, 8th May 1945*, (London, 1995), p. xii.
- ³⁷ Bufton Papers, 3/47, Bottomley to Baldwin, 14 February 1942, p. 2, para. 8.
- ³⁸ Bufton Papers, 3/12, Bufton to Morley, 30 December 1941, para. 6. Also see PRO AIR 20/8145, Baker to Bufton, 1 January 1942, p. 1, para. 6.
- ³⁹ Bufton Papers, 3/11, 'Area attack Employing Gee,' 16 January 1942, p. 1, para. 3.
- ⁴⁰ Alan W Cooper, *The Men who Breached the Dams*, (London, 1978), pp. 20-21.
- ⁴¹ Webster and Frankland, Vol. II, p. 169.
- ⁴² *Highball* was a weapon in preparation for attacking shipping; *Upkeep* was a weapon in preparation for attacking German dams. See PRO AIR 41/43, p. 47. See also, Frankland, *History at War*, pp. 180-1.
- ⁴³ Portal Papers, File 10, 9, Harris to Portal, 18 February 1943, para. 3.
- ⁴⁴ *Ibid.*, 9a, Portal to Harris, 19 February 1943, para. 3.
- ⁴⁵ PRO AIR 20/3223, Harris Paper, 'The Employment of the Night Bomber Force in Connection with the Invasion of the Continent from the U.K.', 13 January 1944, p. 8, para. 22.
- ⁴⁶ Bufton Papers, 3/51, Col. R D Hughes to General H H Arnold, 'Minutes of Conference,' 15 February 1944, p. 2, para. 14.
- ⁴⁷ *Ibid.*, para. 17.
- ⁴⁸ *Ibid.*, para. 26.
- ⁴⁹ Harris Papers, H83, 22, Harris to Portal, 24 March 1944, p. 1, para. 3.

- ⁵⁰ Ibid., p. 2, para. 5.
- ⁵¹ Ibid., p. 3, para. 8.
- ⁵² PRO AIR 41/66, Lady Freeman, Appendix VI/109, Final Minutes of a Meeting on Saturday March 25th to Discuss the Bombing Policy in the Period Before 'Overlord,' p. 4,
- ⁵³ J. Hobbs, *Dear General. Eisenhower's Wartime Letters to Marshall*, (Baltimore, 1999), p. 206
- ⁵⁴ Cox, *Airpower Leadership Theory and Practice*, p. 220.
- ⁵⁵ Michael Howard, 'The Bomber Gets Through,' review of Sir Charles Webster and Noble Frankland, *The Strategic Air Offensive Against Germany 1939-1945*, in *The Times Literary Supplement*, 20 October 1961, p. 746.
- ⁵⁶ Air Marshal Sir Robert Saundby, 'The Part of Strategic Bombing in Modern War,' in *The R.A.F. Quarterly*, Vol. 2, No. 1, January 1950, p. 21.
- ⁵⁷ Bufton Papers, 3/12, 'Immediate and Necessary Steps that must be taken to Ensure the Effective Employment of the Bomber Force,' 31 March 1942, para. 2.
- ⁵⁸ Frankland, *History at War*, p. 75.
- ⁵⁹ Charles Messenger, *'Bomber' Harris and the Strategic Bombing Offensive, 1939-1945*, (London, 1984), p. 55.
- ⁶⁰ Richard Hough and Denis Richards, *The Battle of Britain*, (London, 1990), pp. 319-324, Vincent Orange, *Sir Keith Park*, (London, 1984), p. 129 and Derek Wood and Derek Dempster, *The Narrow Margin*, (London, 1961), p. 412.
- ⁶¹ Hough and Richards, p. 324.
- ⁶² PRO AIR 8/1020, Harris to Portal, 28 December 1944, p. 2, para. 8. This letter also contained an attack on the MEW, who Harris said were guilty of "amateurish ignorance, irresponsibility and mendacity." In fact, with regard to oil questions, most of intelligence was provided by JIC.
- ⁶³ Slessor, *The Central Blue*, p. 450.
- ⁶⁴ Probert, p. 312.
- ⁶⁵ Professor Sir Michael Howard, 'Ethics, Deterrence and Strategic Bombing,' in *Royal Air Force Historical Journal*, Vol. 14, 1994, p. 16.
- ⁶⁶ Webster and Frankland, Vol. III, p. 93.
- ⁶⁷ Terraine, *The Right of the Line*, p. 677.
- ⁶⁸ Max Hastings, *Bomber Command*, (London, 1979), p. 335.

⁶⁹ Ibid., p.334. See also Speer, p. 286.

⁷⁰ Bufton Papers, 5/13, Hastings to Bufton, 11 December 1978.

⁷¹ Bufton Papers, 5/13, Bufton to Hastings, 2 March 1979, para. 3, underlining in the original.

⁷² Mark Connelly, *Reaching for the Stars*, (London, 2001), p. 130.

⁷³ Neillands, *The Bomber War*, p. 349.

⁷⁴ Saward interview, Tape 9, Side A, 1972.

⁷⁵ Bufton Papers, 5/13, Bufton To Middlebrook, 7 September 1972, p. 7.

⁷⁶ Webster and Frankland, Vol. III, p. 242.

⁷⁷ Noble Frankland, *The Bombing Offensive Against Germany*, (London, 1965), p. 103.

⁷⁸ Harris, *Despatch on War Operations*, p.11, para. 20.

⁷⁹ Bufton Papers, 4/7, Bufton to McEvoy, January 1947, p. 4, para. 20.

⁸⁰ Saward, *'Bomber' Harris*, p. 243.

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